

# THE IRON AGE

THURSDAY, JANUARY 21, 1892.

## Torpedo Boat No. 2, U. S. N.

We have from time to time, as opportunity offered, presented very complete illustrated descriptions of the several types of vessels forming our new navy. These articles cover quite thoroughly the several designs necessary to the construction of an entire fleet of war vessels, and are of his-

vessel by use of an intercostal vertical keel and broad heavy stringer plates.

She is also stiffened by the coal bunker bulkheads and side plating forming box girders which are unbroken through the machinery space. She will have a "turtle-back" deck at the bow for the fixed torpedo tube and loading gear. Figs. 3 to 8 inclusive clearly show the hull arrangement.

driving a separate screw; both screws turning outboard. The collective indicated horse-power is estimated at 1800, the number of revolutions at this power being 412, and the piston speed 1100 feet per minute. The valves will be piston valves for all cylinders except the low, which will have double-ported slides. The framing will be forged steel columns trussed by steel stays in a manner de-

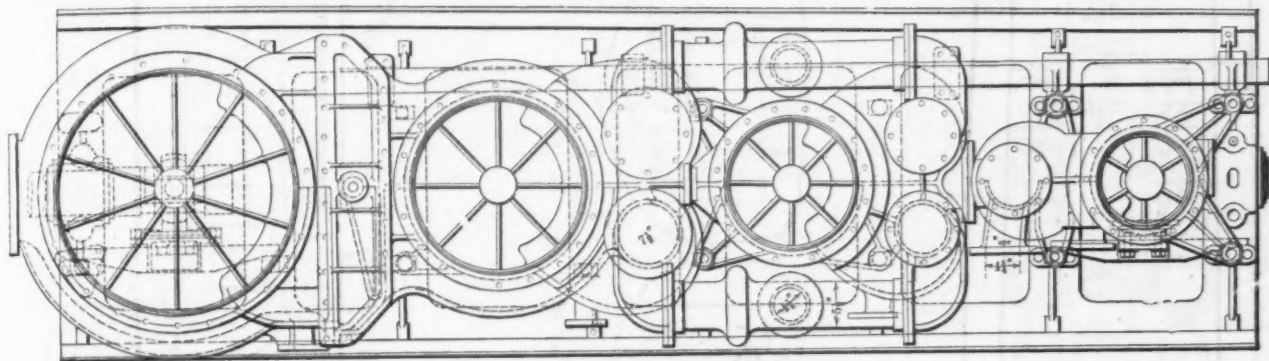


Fig. 1.—Plan of Engines.

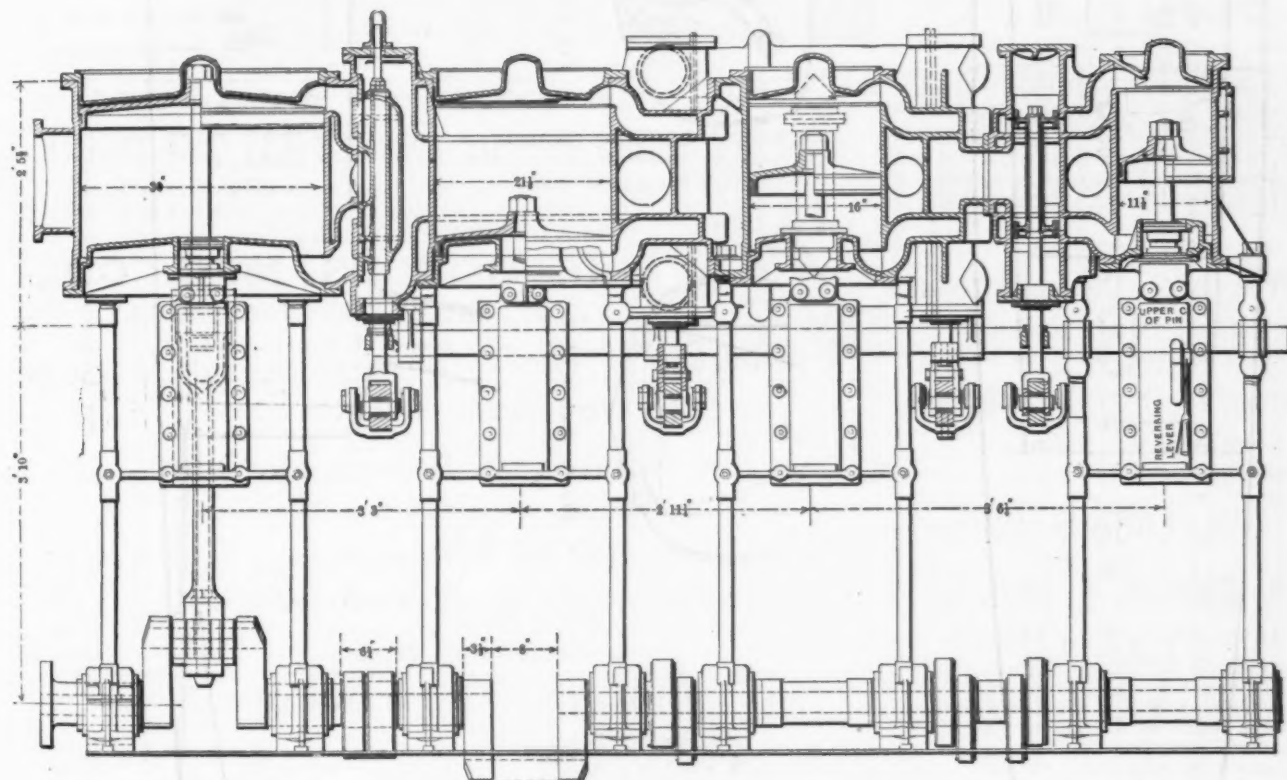


Fig. 2.—Side Elevation of Engines.

TORPEDO BOAT No. 2.—SPEED, 24 KNOTS.

torical interest as showing the rapid strides which have been made during the past two or three years. We now have to describe the Torpedo Boat No. 2, which, because of the speed required, 24 knots per hour, is of unusual interest.

### General Description.

This boat is 150 feet long, 15 feet 6 inches beam, draft amidships 4 feet 9 inches, having a normal displacement of 120 tons. Her hull is constructed on the transverse system, special attention being paid to the longitudinal strength of the

The armament will consist of one fixed torpedo tube at the bow, two diverging tubes on training circle aft, and four 1-pounder machine guns. The tubes will accommodate the new 18-inch Whitehead torpedo.

### Engines.

Her motive power will consist of two quadruple expansion engines (shown in plan and elevation in Figs. 1, 2 and 9) of 11½, 16, 21½ and 30 inches diameter of cylinder by 16 inches stroke. These engines are rights and lefts, placed in a common water-tight compartment and each

signed to combine the greatest possible stiffness with the least weight. All the working rods about the engine will be of mild forged steel.

The bed plates are made of steel plates stiffened with angles and built into the vessel. The piston and connecting rods will be oil tempered.

### The Condenser

will be made entirely of composition and sheet brass in the lightest and strongest manner possible, with a cooling surface of 1379 feet. The circulating pump will be

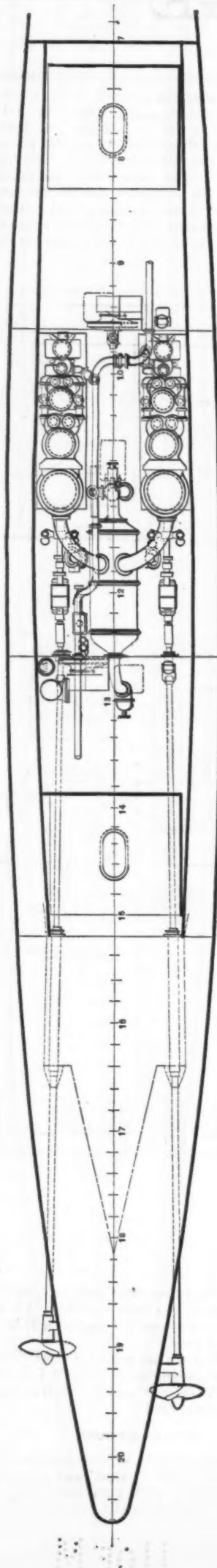


Fig. 3.—Plan.

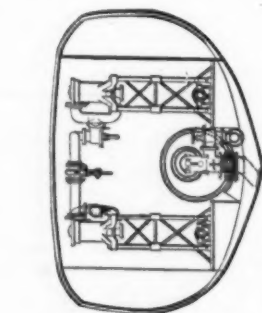


Fig. 8.—Section at 10.

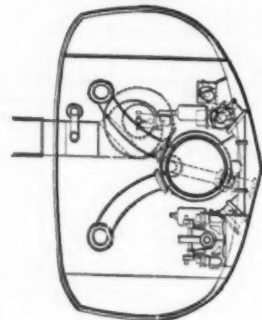


Fig. 7.—Section at 12.

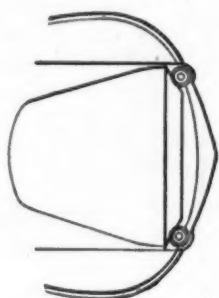


Fig. 6.—Section at 15.



Fig. 5.—Section at 19.

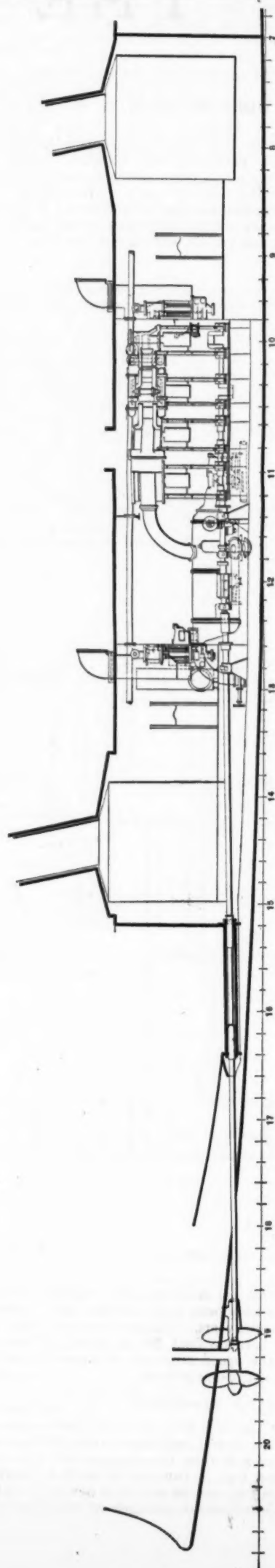


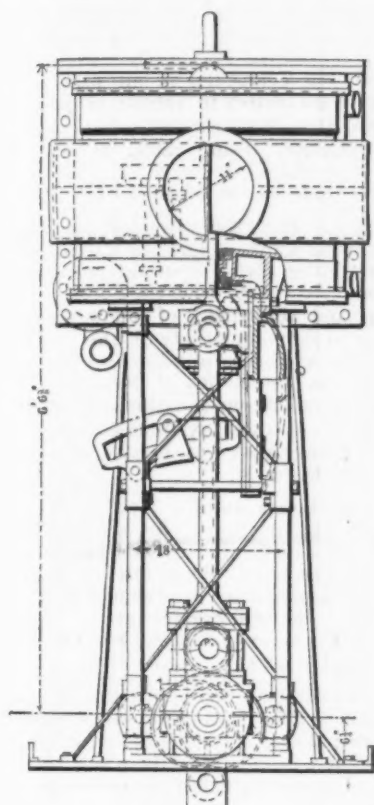
Fig. 4.—Vertical Longitudinal Section.

TORPEDO BOAT No. 2.

of the centrifugal variety, which with its engine is formed directly on the condenser head. The injection pipe will have a scoop on the outside of the ship by means of which water will be thrown through the condenser by the motion of the vessel. The main air pumps are placed directly under the condenser and are worked directly from the main shafts. An auxiliary air pump is provided to keep the condenser free while the main engines are standing still.

#### The Boilers

will be of the water-tube variety, constructed for a pressure of 250 pounds per square inch, which will be the working pressure of the engines; one boiler will be placed forward and one abaft the engine room, each in a water-tight compartment, and the closed fire rooms will be furnished



Torpedo Boat No. 2.—Fig. 9.—End Elevation of Engines.

with blowers capable of supplying air to burn 60 pounds of coal per square foot of grate per hour.

There will be two main and two auxiliary feed pumps fitted, the main feed pumps being worked from the main shafts through a worm gear which reduces the number of strokes one-fourth.

There will be an evaporator and distiller supplied.

The entire weight of the engines, boilers and all engine-room and fire-room weights complete for sea, with water in boilers, will not exceed 52 tons.

There have been no new developments during the past week regarding the affairs of Jas. P. Witherow, engineer and contractor, of Pittsburgh, mention of whose assignment was made in our issue of last week. Mr. Witherow is lying seriously ill at the Monongahela House in that city, and under directions from his physician no one is allowed to converse with him regarding business matters. We understand that a number of the largest creditors have held several informal meetings since the assignment was made, but as near as we can learn, no definite plan of action has been devised. In this connection we desire

to state that any proposition looking to the arrangement of the business affairs of Mr. Witherow and submitted to the assignee would no doubt be favorably received by that person. From several of the larger creditors we have received expressions of opinion to the effect that the terms of the original extension as granted to Mr. Witherow are still thought to be the best way out of the difficulty. If this extension should be adopted, and go into effect, the works would then be under the direct supervision of Alexander Thomas, assignee, and would, no doubt, be operated in a manner satisfactory to the creditors and also to Mr. Witherow. It is probable that definite action of some kind on this matter will be taken in a short time.

#### The Soo Canal Business.

In his report to General Casey, Chief of Army Engineers at Washington, Colonel Poe discusses the Soo Canal and its business aspects as follows:

The canal opened for navigation April 27, 1891, and closed December 7. The season was therefore 225 days long, or three days shorter than in 1890. The average number of vessels passing per day for the whole season was 45.3, and for the months of June, July, August and September the average was 54.6. The size of the vessels continues to increase, as is shown in the following statistics:

	Tons.
In 1887 the average registered tonnage per vessel was.....	626.3
In 1888 the average registered tonnage per vessel was.....	701.5
In 1889 the average registered tonnage per vessel was.....	790.5
In 1890 the average registered tonnage per vessel was.....	833.8
In 1891 the average registered tonnage per vessel was.....	802.1

The total registered tonnage for the season falls 53,750 tons short of that for 1890, and the freight tonnage was 152,454 tons less.

For the whole period since 1881 the iron ore carried through the canal has been 47 per cent. of the total freight, and in 1889 and 1890 it was more than 50 per cent.; therefore the freight may be divided into two nearly equal parts, one of which was the iron ore, the remainder being the aggregate of all other freights. The percentage of increase since 1881 falls between 12 and 39 each year, the average being 22. During 1890 the freight other than iron ore amounted to 4,266,445 tons, and for 1891, 5,328,548 tons. This shows an increase of 25 per cent. in the freight of 1891—other than iron ore—over 1890, or a little more than the average increase for the preceding ten years. Hence the decrease in iron-ore freight alone is sufficient to explain why the business of 1891 did not show the usual increase.

Excluding iron ore and wheat in 1891, the remaining tonnage was 3,725,860. Hence the increase in freight, exclusive of iron ore, was 8 per cent., which indicates quite a falling off from the average rate of 22 per cent. for the last ten years and shows that if the wheat crop of the Northwest had not been unusually good this season there would have been a slight decrease in the volume of freight other than iron ore.

The foregoing relates solely to tonnage. If we consider the value of the season's freight, we find a very large increase over any other. The average yearly increase in the value of the freight transported since 1881 was about 15 per cent., but for the season of 1891 it was about 25 per cent. The cause of this great increase in valuation is plainly due to the very large wheat crop. Since we are not likely to be immediately favored with another such crop, a decrease in valuation may reasonably be predicted for next year.

The iron ore carried in 1891 amounted to 3,560,213 tons, as compared with 4,774,-

768 tons during the previous year, and the copper weighed 69,190 tons, an increase of 25,461 tons over the previous year. The pig iron transported amounted to 27,181 tons, an increase of 4469 tons. The total valuation of commerce through the canal for the calendar year was \$128,178,208, against \$102,214,948 in 1890.

#### American Goods in China.

Edward Bedloe, American Consul to Amoy, who has returned on leave of absence, speaks entertainingly of prospects in that country. It is a fact, he says; that the Chinese entertain a higher respect for America and Americans than for any nation in the world. They know the value of American products and will use them in preference to all others when procurable. The Dutch and English merchants who are in China know this, and have the audacity to counterfeit on the American imports. All our cotton goods, machinery, fire arms, implements and tools have gained such a foothold that the merchants spoken of import like goods—like only in appearance—from England and Germany with the names of the American manufacturers, trade-marks and everything. These are sold indiscriminately to the Chinese, who learn the deception only after they have used the goods. The superiority of the American products in this line of manufactures that go to China is so apparent that little more need be said on that point. It is a matter of record that the Premier of China, in conversation with one of our naval captains, expressed a desire to see some of our cruisers of the make of the San Francisco, stating that the Chinese Government wished to buy four of that class, and from the description he had seen of it he thought that class of a vessel would be much more desirable than that of the German or English make, and that if the United States shipbuilders would send one over for him and his people to see, he thought the order would be placed with us. This is a pointer for our ship builders.

**The Quicksilver Trade.**—The receipts of quicksilver at San Francisco from California mines in December were 1287 flasks, against 1182 flasks same month in 1890 and 1386 flasks in 1889; 14,982 flasks were received during last year, 12,947 in 1890 and 16,264 in 1889. The exports from that port by sea last month were 138 flasks, of which 110 went to Mexico. The exports in the same way for the year 1891 were 80 flasks to Japan, 10 to Australia, 250 to New Zealand, 210 to Central America, 3491 to Mexico and 5 to British Columbia, of a total value of \$175,730. In 1890, 3426 flasks, valued at \$173,660, were exported. There has not been a flask sent hence to China in three years. Four years ago China took 3758 flasks from us. In the year 1891 a considerable quantity was imported from China for account of Mexico, and re-shipped from San Francisco.

The Western Traffic Association formed as the outcome of the "bankers' agreement" has shown unexpected powers of endurance. Railroad tariff rates have been maintained with some appearance of stability. But last week, in consequence of a hasty expression of Mr. Gould respecting the attitude of the Missouri Pacific, a belief was entertained in many quarters that his road would withdraw from the association. This act, it was assumed, would be fatal in its consequence. Two members of the organization had been officially adjudged guilty of rate cutting. Neglect to enforce the penalties caused much hard feeling. The difficulty, it is now supposed, will be smoothed over.



## WORLD'S FAIR NOTES.

### Construction Work.

The past week was a period of extremely cold weather. But in spite of cold and snow the work on the buildings at Jackson Park was pushed without cessation. Nearly 300 workmen engaged in landscape gardening were laid off because the ground was frozen and they could do nothing, but on the buildings work has steadily progressed. The iron men are especially active, and amidst the driving snow have been putting up the immense steel ribs in the dome of the Horticultural Building. These weigh 6 tons each, are 110 feet high to the apex and have a span of 180 feet. Staffmakers and carpenters are busily engaged, and although they labor at a disadvantage they continue to make daily progress. Chief of Construction Burnham realizes that he is under obligations to complete the buildings on time and he does not intend that stormy or cold weather shall interfere with progress on the great structures. There are at least 3500 men at work now, and they are to be kept constantly employed rearing the big buildings.

### Chief Skiff's Mission.

Chief Skiff of the Mines and Mining Department has returned from a trip in which he visited, in the interest of the Mining Department, New York, Philadelphia and Washington. He found that the departments of the Smithsonian Institution and others in Washington, representing which are Major Powell, Professor Clark and Dr. Day, are deeply interested in the welfare of the mines and mining exhibition at the fair, and are anxious to assist in every possible way. In the Patent Office Commissioner Simons said he would further it by carrying out illustrations in the evolution of mining processes. This will be done by the exhibition of models already in the Patent Office. Mr. Skiff has brought back blue prints of all the forms and styles of showcases and cabinets used for the exhibition of mineral specimens in all the largest scientific universities in the world.

### Conflicts of Authority.

As is usually the case with enterprises having a double headed management, there are continual conflicts of authority between the National Commission and the Board of Directors. Thus far everything has been peacefully adjusted, and it is unlikely that there will be any serious difficulty between the two organizations. The latest clash has been caused by a ruling of the Board of Directors which permits the regulations governing exhibitors to be withheld from distribution for several weeks until passed upon by the special committee appointed by President Baker. This is a somewhat serious charge, and appears to reflect on the management of the directory. Of the fourteen great departments of the fair it appears that the chiefs of only four have been able to get their rules and regulations printed and distributed.

Chief Allison of the Department of Manufactures has sent a strong letter to the Director-General, urging him to have the regulations which he prepared printed. Mr. Allison is chief of probably the biggest department of the fair, and he declares that his work is completely blocked. He has a stack of letters from correspondents who burden him with queries for information which he says is already in type, but cannot be issued. Chief Buchanan of the Department of Agriculture, and also Acting Chief of the Department of Forestry and Live Stock, is in a worse fix than Mr. Allison. His regulations have been ready, it is said, for six weeks, awaiting the approval of President Baker

or the special committee recently appointed by him. Other chiefs of departments are besieged with inquiries which they cannot answer until authorized to do so by the officials of the Board of Directors.

The whole trouble seems to grow out of the fact that while the commission is granted rather extensive powers it has no money with which to exercise the functions conferred. Meanwhile the Board of Directors, with millions back of it, has decided to exercise a close supervision over all expenditures. This supervision has taken the form in a measure of jurisdiction, and while, by agreement between the commission and the Board of Directors, the chiefs of departments are to issue regulations, the directory, by refusing to pay the bill for printing them, can suspend any action.

### Will Build a Blue Grass Palace.

Advices from Creston, Iowa, state that the Blue Grass League perfected its annual organization by the election of the following officers for the ensuing year: President, William Scott, Creston; secretary, J. J. Steadman, Council Bluffs; treasurer, Z. T. Wiedner, Corning.

Numerous letters from the various county organizations were read, promising hearty co-operation in any action of the league. Harrison County was admitted to membership. A resolution favoring an exhibit of the products of the now famous Iowa Blue Grass region and the building of a Blue Grass Palace at the World's Columbian Exposition was unanimously passed. Said Secretary Steadman:

"The World's Columbian Exposition at Chicago will present the one opportunity of our lives to let the whole world know what a grand country southwest Iowa is, and we must not permit the opportunity to pass. I favor the most liberal of appropriations by our Legislature, and a part of that appropriation should be given the Blue Grass League with which to make its exhibit."

Creston will rebuild its Blue Grass Palace this year, and it will be more beautiful and attractive than any of its predecessors.

### Sanitary Appliances.

The American Public Health Association has offered its services for bringing to Chicago not only all facilities known for the promotion of health, but all the leading thinkers in lines of sanitation. It will probably be intrusted by the World's Fair promoters with the details of the work. The scheme of the association covers a sanitary exhibit surpassing anything of the kind ever before made. Its membership includes the sanitary officers of the various States, of the army and navy of the United States, and of the Governments of Canada and Mexico. Its classification of sanitation work is: Dwellings, schools and education, factories and workshops, clothing and dresses, food, sanitary engineering, public health administration in cities and towns, the laboratory, and the red cross section. It has been in existence since 1872. Dr. J. H. Rauch, who in 1872 was Sanitary Superintendent of Chicago, was one of its founders. Its officers for this year may be mentioned, as they will cut a big figure in preparing for the World's Fair exhibit. They are: President, Dr. Felix Formento, New Orleans; first vice-president, Dr. Domingo Orvananos, City of Mexico; second vice-president, Dr. Walter Wyman, Washington, D. C.; secretary, Irving A. Watson, Concord, N. H.; treasurer, J. Berrien Lindsley, Nashville.

Dr. J. H. Rauch of Illinois is chairman of the committee of this association to prepare for a suitable exhibit at the World's Fair.

The next meeting of the association will be held in the City of Mexico this year, and the next annual convocation will be in Chicago during the World's Fair.

### Brevities.

The average Southern pine lands cut 15,000 feet of lumber to the acre. On this basis it will require 4500 acres of standing pine to finish the construction work now in progress on the World's Fair site.

The electrical subways or tunnels will be 6 feet in diameter, and will conduct the wires for electrical power and light for the grounds and buildings. The bids have been opened and the contract will go to T. C. Brooks & Co. for about \$35,000.

The Construction Department has issued a prospectus asking for bids for the railway in Jackson Park. The various transportation companies in all parts of the world are invited to submit propositions. From this it appears that the road may be electric, steam, cable, or any other species which may prove acceptable. The bids are to be opened March 1.

Chief Buchanan received information from the Southern Lumber Manufacturers' Association saying it would put in one of the grand vestibules in the Forestry Building and construct it of yellow pine in a way to show the beauty of this variety of wood and its susceptibility to polish. The National Association of Hardwood Lumber Manufacturers has consented to put in another of these vestibules. About 25 States have agreed to furnish columns for the building.

The Illinois Board of World's Fair Commissioners purchased for \$8000 the fine Worthen geological collection which was the property of the late Professor Worthen, State Geologist at the time of his death in 1888. The collection contains 42 boxes of fossils and minerals and 800 volumes of geological books.

Reports from Spain state that the Exposition in Chicago is quite well understood there; that in Madrid it has aroused a considerable interest, and there is a prospect of an interesting exhibit from that country.

The Pennsylvania Railroad Company lines have taken up the matter of an exhibit for the Department of Transportation Exhibits of the World's Fair systematically. They have appointed a committee which will consult with the officers of the different departments of all these different roads and ascertain their views as to what it is best to show.

The special committee of the United States Potters' Association called last week on Director General Davis and Chief Allison of the Department of Manufactures and made a formal request for 32,000 square feet of space in the Manufactures Building. The committee assured Director-General Davis that the Potters' Association would endeavor to surpass in its display any similar exhibit that might be sent from Europe or other foreign countries.

Edward H. Williams, A. B. Farquhar, Luther S. Bent, James M. Guffey, J. P. S. Gobin, George N. Riley, Thomas P. Merritt and P. Filey, members of the Committee on Machinery and Manufactures of the Board of World's Fair Managers of Pennsylvania, have issued a circular to the manufacturers of that State, appealing to them to extend their aid in placing Pennsylvania in the lead at the great exposition.

The Chemical National Bank Company of Chicago were awarded the contract by the Ways and Means Committee for conducting a bank on the exposition grounds.



All the conveniences of a down-town banking institution are to be furnished. Safety vaults will be provided and the company will be placed under bond to fulfill their engagements. The safe conduct of the institution is to be in a measure guaranteed by the Exposition Company, and intending customers are expected to feel that transactions with the bank will be without risk.

#### The Parker & Knight Screw-Cutting Engine Lathe.

The object aimed at by the Parker & Knight Company of Baltimore, Md., the manufacturers of this lathe, was the production of a heavier and stiffer machine in its working parts than is usual. The headstock has a five-stepped cone pulley, whose largest diameter is 12 inches and smallest 4 inches, carrying a 2½-inch driving belt. The spindle is of hammered steel, with a 1½-inch diameter hole its entire length, the front bearing being 3 inches diameter by 4½ inches long, and back bearing 2 inches diameter by 3½

inches long. The actual swing of this lathe over the ways is 17½ inches, swing over carriage 10 inches, while it will take stock 32 inches long between the centers. The back gearing is heavy and powerful, being in the ratio of 15 to 1. The tail spindle is hammered steel, 2 inches in diameter and 13 inches long, with 7 inches of travel. The lathe centers are tool steel, 1½ inches in diameter. The feed motion has a wide range, as with the aid of the stud shown on the lower cone, in connection with the gears on its inner end, six distinct changes of feed can be obtained. All the operations of throwing in feeds, reversing, throwing in screw-cutting nut, &c., are accomplished in the apron, the operator not being obliged to reach over to the back of the lathe or go to the end of the headstock to reverse the gearing. The range of screw cutting is every number from 2 to 16, inclusive, and every even number above that to and including 36 per inch. The carriage is made very long on the ways, 22½ inches, and is provided with four slots in the front and two on the back for holding work on the top for boring. It has friction cross feed and the gearing can be thrown out when cutting screws, so that even should the feed friction be set tight no harm can be done. The lathe has friction countershaft, with 12 inch by 3 inch face pulleys for driving belt. As shown, the lathe is built with

#### International Banking.

Charles R. Flint of New York, one of the largest exporters from this country to South America, addressed the Merchants' Club of Boston last week in advocacy of the establishment of an international American bank. He spoke of the difficulty of opening up markets abroad for our surplus products of manufacture. The surplus stock has a far more important bearing upon dealings in every article than its ratio to the total trade. He touched on the manner in which our merchants borrow money from English banking houses.

This system, said he, results in the loss to America of interest and differences in exchange, as well as of commissions, all of

Pond Machine Tool Company, but the real losers are the Fidelity and Casualty Insurance Company, in which the Pond Company have an employer's liability policy. The Pond people have 400 employees. The accident by which Robinson lost his eye was a curious one. He was at work in the Pond shops when the eyeball was struck by a flying minute particle of steel from the chisel of a fellow workman. The sight was instantly destroyed. The resultant suit was considered a test case. Robinson obtained a verdict for the full amount sued for. The insurance company will carry the case into the highest courts to settle disputed questions of law.

#### The Rolling-Stock Litigation.

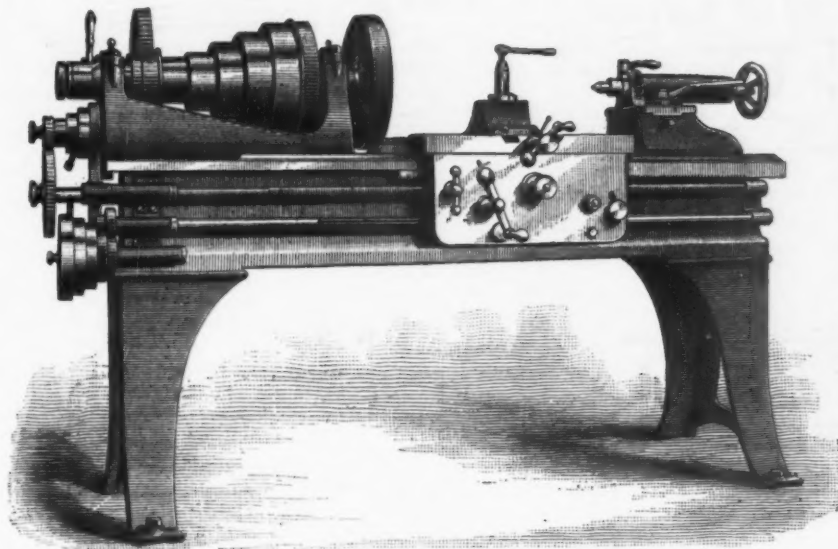
The fight now being waged between the unsecured creditors of the United States Rolling Stock Company and the stock and bond holders of the company took a different aspect on the 15th, when Carnegie, Phipps & Co. filed an intervening petition in the suit of William Brander of London against the company. Brander brought suit as an owner of certain of the company's debenture bonds to foreclose a mortgage executed to the Central Trust Company of New York to secure the issue of the bonds. Carnegie, Phipps & Co. say they are unsecured creditors for a large amount, and they believe the suit brought by Brander was instituted by him in pursuance of an agreement between the company's shareholders and bondholders for the sole purpose of carrying out a scheme of reorganization having for one of its objects the sale of all the corporate property of the company for the benefit of the shareholders and bondholders and to the exclusion of the judgment and floating creditors. It is also charged that the suit is an agreed one between Brander and the company's solicitors, and that as speedily as possible some agreed final decree of foreclosure and sale shall be obtained for the purpose of carrying out the scheme. It is also charged that Brander is a stockholder and one of the Reorganization Committee, which, it is charged, is scheming to exclude unsecured creditors. The default in the payment of interest on which suit was brought is declared to have occurred expressly by the consent and direction of Brander and other members of the Reorganization Committee.

While the receiver and his counsel have been industrious in resisting the claims of the petitioner and other creditors unsecured, it is claimed that no defense has been interposed in resistance of the foreclosure asked by Brander, and the charge is made that the receiver is acting in full concert with the Reorganization Committee. The petitioner asks to be allowed to enter the suit as a defendant and to take proper steps to resist Brander's scheme.

Phil. Armour, the provision packer of Chicago, is said to carry on the heaviest individual business of any man in the world. During the year 1891 his Chicago jobbing business amounted to \$66,000,000, and his elevator business to \$9,000,000, making a total of \$75,000,000. How do those figures strike you? At the stockyards Mr. Armour employs an army of over 8000 men, while his clerical force numbers between 250 and 300 men. He gives his close personal attention to the details of his enormous business, and may be found hard at work at his desk bright and early every morning. "Armour's stockyards," one of his representatives remarks, "are a sight worth going hundreds of miles to see, and ought to inspire every young man with an ambition to try and see what he can accomplish in this world by devoting himself strictly and conscientiously to business."

which could be saved to America if international American banking were developed and systematized. At the Pan-American Congress last year in Washington a chosen committee decided that the best means for the development of financial relations between the markets of North, South and Central America would be the passage of a law by the United States incorporating an international bank. Such a bank, having agencies in the financial centers of the Americas, would materially promote the establishment and immediate use of a common standard for calculating values whenever such a standard shall be determined upon by the nations in interest. To extend our business as exporters we as merchants must be prepared to give larger and longer credits. But whom shall we trust? Who are credit-worthy? By the establishment of a well-organized system of international American banking, our merchants and manufacturers would be able to get reliable information as to all the markets, and would be prepared to extend larger credits and with greater safety. The representatives of the system in the several money markets of the Americas would immediately become interested in fostering such relations and facilitating such business to the utmost extent.

The verdict for \$5000 secured by Joseph W. Robinson of Plainfield, N. J., for the loss of an eye, is nominally against the



SCREW CUTTING ENGINE LATHE.

inches long. The actual swing of this lathe over the ways is 17½ inches, swing over carriage 10 inches, while it will take stock 32 inches long between the centers. The back gearing is heavy and powerful, being in the ratio of 15 to 1. The tail spindle is hammered steel, 2 inches in diameter and 13 inches long, with 7 inches of travel. The lathe centers are tool steel, 1½ inches in diameter. The feed motion has a wide range, as with the aid of the stud shown on the lower cone, in connection with the gears on its inner end, six distinct changes of feed can be obtained. All the operations of throwing in feeds, reversing, throwing in screw-cutting nut, &c., are accomplished in the apron, the operator not being obliged to reach over to the back of the lathe or go to the end of the headstock to reverse the gearing. The range of screw cutting is every number from 2 to 16, inclusive, and every even number above that to and including 36 per inch. The carriage is made very long on the ways, 22½ inches, and is provided with four slots in the front and two on the back for holding work on the top for boring. It has friction cross feed and the gearing can be thrown out when cutting screws, so that even should the feed friction be set tight no harm can be done. The lathe has friction countershaft, with 12 inch by 3 inch face pulleys for driving belt. As shown, the lathe is built with

## STEAM BOILERS.\*

BY JOHN J. HOGAN.

(Concluded from page 6.)

In the class of boilers illustrated in Fig. 43 (page 6, *The Iron Age*, January 7, 1892), the circulation is assumed to be up the inclined tubes to the receptacles or inclined vertical passages at front end. These inclined vertical passages vary in design and proportions, some being of large internal volume relatively, others present curved, intricate and circuitous ways, offering every possible obstacle to a free ascent of the heated water and ascending globules. The boiler shown in Fig. 43 of this class presents as clear and open passages as are practical to attain in this construction. The presence of descending or cooler currents is apparent, as these vertical passages which connect the inclined tubes to the upper water and steam drum of front end have only one side exposed toward the heated gases, while the surfaces of the other side give off a certain quantity of heat to the air space in which they are placed. In some designs of this form of boiler the front vertical passages receive on the surfaces exposed to the gases less heat than the vertical passages which connect the lower part of the inclined tubes to the back end of the upper water and steam drum. When this occurs circulation is seriously interrupted, if not stopped. If the descending currents to the lower end of the inclined tubes are impeded, not to

the tubes, which are vertically inclined, while the others may be said to be horizontally inclined. Circulation takes place between three upper drums and one lower drum. The upper drums are interconnected in their steam spaces, but are not connected below the water line. Each of the upper drums circulates through its connecting tubes and the lower drum. When heat is applied, the water in the tubes of each of the three upper drums which receives the highest temperature relatively is displaced by the water in the less heated tubes, which it may be inferred

no effort made to prevent the intermingling of currents. An advantage may be claimed for the large volume of water at each end of the inclined tubes as a precaution to secure a local circulation between the front and back end of the tubes. This claim would be more apparent if the upper inclined tubes received the greatest heat, which is not possible in this construction.

**Another Design.**

Fig. 57 represents a design of inclined-tube boiler differing from the preceding types, Figs. 43 and 56, in construction

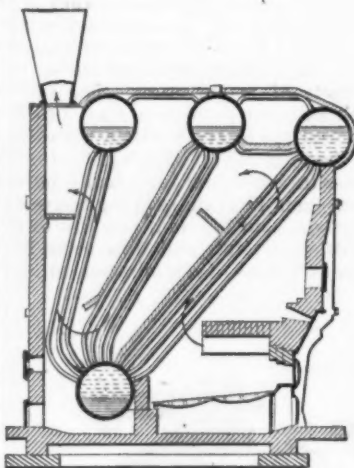


Fig. 53.—The Sterling Boiler.—American.

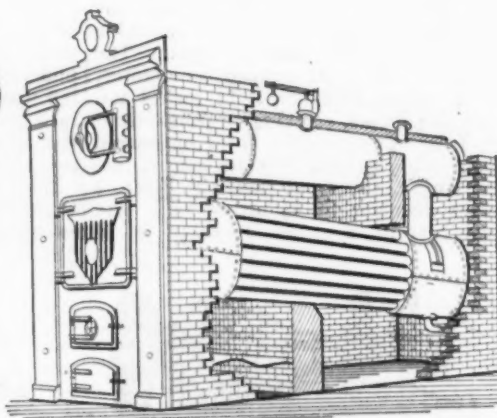


Fig. 56.—The Wood Boiler.—American.

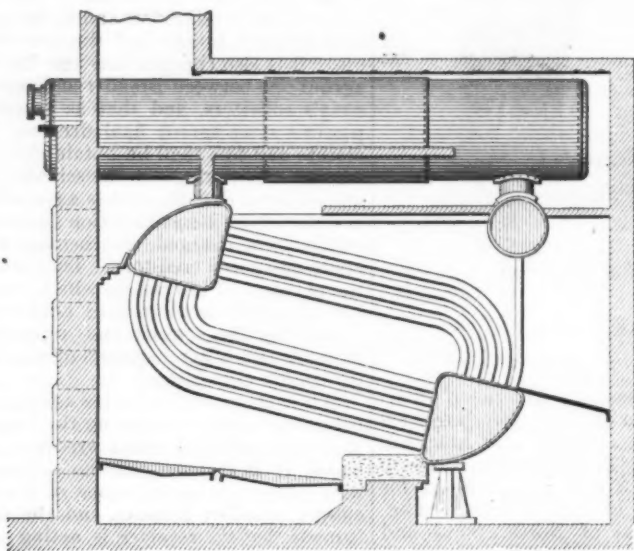


Fig. 57.—Seller's Water-Tube Boiler.

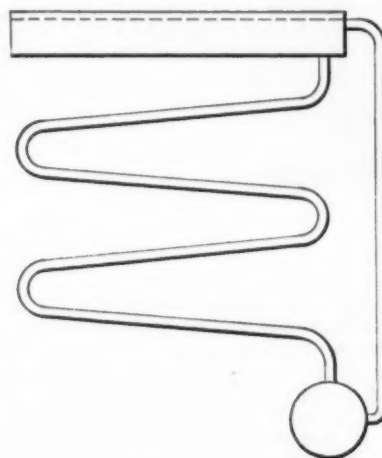


Fig. 58.—Pipe Boiler.—Ascending Currents Delivered Below Outlet for Descending Currents.

## STEAM BOILERS.

say stopped, steam is readily produced in the inclined tubes over the fire. The presence of this steam tends to maintain the impediment to circulation and results in producing irregular pressures in the lower part of the boiler, as well as the excessive heating of one or more inclined tubes. The overheating of some of the tubes produces excessive expansion, resulting in fracture where the construction is not of sufficient strength to withstand the unnatural strain.

**A Recent Design.**

Fig. 55 illustrates one of the latest designs in water-tube boilers. It differs from the other boilers in the position of

\* Copyrighted, 1891, by David Williams, New York.

are near the ends of each drum. As the temperature of the fire increases the vertical ascending and descending currents become more rapid. If steam is produced in any of the tubes, the pressure being uniform throughout, the water in the other tubes displaces the steam, because it is relatively heavier. Each tube in this boiler conveys its heated globules of steam and water to the steam and water drum without intermingling with or being obstructed in their ascent by other currents of relatively lower temperatures.

**Another Construction.**

Fig. 56 illustrates an inclined-tube boiler in which drums are used at each end of the tubes in place of vertically inclined passages. In this design there is apparently

and design, yet retaining practically the same provision for circulation. A large volume of water is maintained at each end of the inclined tubes, and the front connection, or the ascending passage, receives apparently less heat than the back or descending passage. The lower tier of bent inclined tubes receive the greatest heat, and the steam and water of high temperatures pass freely and unimpeded to the front or higher D-shaped drum. Here the temperature of these currents is reduced by intermingling with others of a lower temperature from the upper tier of bent inclined tubes. From this front D-shaped drum the heated currents are supposed to pass up through the front connection to the upper steam and water drum, which connection is possibly of a



less temperature than the back connection. The water which is to displace the highly heated water in the lower tier of bent inclined tubes should apparently pass down the back connection from upper steam and water drum to lower D-shaped drum.

This course is, however, impeded apparently by the temperature given to the back or descending connection from the upper steam and water drum. It is improbable that the course of circulation is down the upper tier of bent inclined tubes to the lower D-shaped drum, except at the sides where they are less exposed to heat. Therefore, any impediment to the descending currents in the back connection from the upper steam and water drum affects the rapid displacement of the heated globules in the lower tier of bent inclined tubes. The general design of this boiler, Fig. 57, presents easy passages for the ascent of the heated currents, and if the heat was applied so as to promote their ascent as well as the descent of relatively cooler currents, circulation would be improved. No change in the application of the heat will, however, entirely

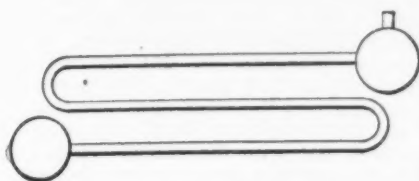


Fig. 59.—Pipe Boiler.—Descending Currents Not Provided For.

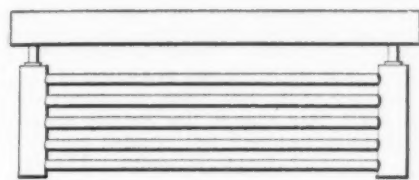


Fig. 60.—Pipe Boiler.—Horizontal Pipes, Both Ends Level.

"pipe boilers." Where this design occurs it has more generally been adopted as a means of introducing heating surfaces than for assisting circulation in a partial way.

#### Cast-Iron Boilers.

No reference has been made to cast-iron boilers, as it is probable that they will not be proposed for high pressure steam. Cast iron sectional boilers for power purposes may be used with safety to certain limits of pressure, possibly 75 pounds per square inch. The pressures of the future will be generally somewhere between 100 and 200 pounds, and it is, therefore, but fair to assume that boilers made of cast iron in large or small pieces will never be used under the pressures named. For this reason an examination of their water-circulating capacities has not been considered.

#### Conclusions.

The conclusion which can be deduced from this summary of existing methods of circulating water in all classes of boilers is, that in a well-designed boiler its circulation can be positive, clearly discernible, and impossible to impede or even to stop when fired with accelerated or natural draft at any temperature. It will be positive because definite passages will be provided for the ascending and descending currents.

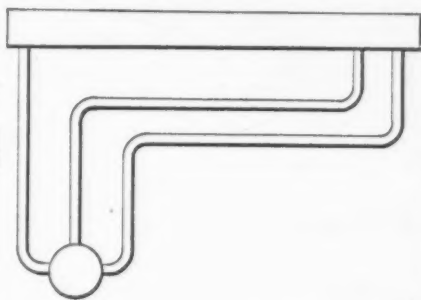


Fig. 61.—Pipe Boiler.—Horizontal Pipes, with Ascending and Descending Currents Provided For.

### STEAM BOILERS.

prevent the intermingling of currents of various temperatures.

#### Water-Pipe Boilers.

Figs. 58 to 61 inclusive show diagrams of some parts of water-pipe boilers. It is unnecessary to point out fully or at length what little provision has been made to promote natural circulation, as it is almost apparent.

Fig. 58 presents an error met with in pipe boilers. It is not considered of much importance, but offers a decided opposition to free circulation in addition to the opposition due to the use of inclined horizontal pipes. Fig. 59 is another design in which circulation is not provided for and results in the destruction of the pipes exposed to the fire. Fig. 60 shows a construction which exists in many designs of boilers of the "water-pipe" as well as the "water-tube" types. Here the construction is mechanically incorrect. Two or more pipes or tubes are placed parallel between two fixed headers. The lower ones are exposed to more heat than the upper ones and therefore elongate; straining the joints of the less-heated tubes by tending to push the headers apart or injuring the joints of the elongated tubes is the result. Especially as there is no provision for circulation, as in Fig. 60, irregular straining is more frequent and fractures occur. Fig. 61 represents a manner of providing partially for circulation in

It will be clearly discernible because the passages provided for the ascending currents will be directly exposed to the action of the highest temperatures of the fire so as to absorb all the radiant heat possible, while the passages for the descending currents will be removed from the action of the highest temperatures. Circulation cannot be impeded or even stopped, because the water in the descending passages can never acquire the same temperature as the water in the ascending passages, and in these latter passages there will be no intermingling of currents or frictional resistance to prevent the continuous and uninterrupted displacement of steam and relatively heated water by the weight of the water in the descending passages.

#### Tubes in Construction.

To obtain this circulation tubes and small cylinders used in the construction of steam boilers are more desirable than large cylinders and flat surfaces. With the use of small cylinders and tubes, independent passages for the circulation of small bodies of water can be provided, and vertical and inclined heating surfaces secured. By such means the structural strength of the steam boiler to withstand high internal pressure is made sure, and the waste of material used in providing for irregular strains is saved. The use of tubes and small cylinders without stays insures

greater safety with high pressures than heavy plates and large spaces held uncertainly by numerous stays. The strains due to irregular expansion caused by bad circulation are removed by the introduction of good circulation, and all the contrivances necessary to provide for such strains are therefore avoided in a well designed steam boiler.

#### The Feed Water.

The introduction of the feed water into the steam boiler is a matter that has demanded a great deal of attention. This consideration is not so much due to a desire to obtain economical working results as to the fact that the existence of the boiler depended on the condition of the feed water. To allow cold water to enter the majority of the boilers constructed as just described would cause them to leak, and the undue strains to which these boilers were subjected by the admission of cold water endangered their existence. Sediment and the deleterious matter in the water, as well as the chemical qualities, are also sources of trouble, because these ingredients were precipitated within the boilers. Scale was readily formed on the surfaces, and still more rapidly accumulated, on account of the absence of circulation, which will prevent its rapid accumulation. In a well-designed boiler the feed water should not be admitted in or near the water from the surface of which the steam is given off. The feed water should be allowed to enter the boiler in such a way that during its passage to the heat-absorbing surfaces it will attain the temperature of the water in the boiler and precipitate all foreign substances before passing to the principal heat-absorbing surfaces of the boiler. It should enter so that the effect of its temperature will be distributed among the numerous descending currents, thus assisting their descent. By such an arrangement it will be impossible for cold water to cause injurious effects.

#### The Condition of the Steam.

The condition of the steam—that is, its dryness—on leaving the boiler reflects the manner in which it has separated from the water within the boiler. If the circulation of the water is good and uniform the steam disengages from the water freely and naturally as soon as it arrives in the steam space, and the water falls back to descend in the passage to which its gravity guides it. Under such conditions what is termed "dry steam" will be the natural result. When the circulation is bad, not uniform, and fierce ebullition is the average condition of the water, steam and water combined gain the surface spasmodically. The steam lifts the water, tossing and throwing it in indefinite ways, because there is no channel to give it direction or guide it.

#### Structural Defects Left Out.

In designing a steam boiler structural defects which necessitate additional material should be left out. Good circulation, safety, durability and economy in construction and working, as well as mechanical correctness, are capable of a co-existence in a well-designed boiler. Good circulation will secure safety, durability and economy. Large cylinders or shells for high pressure need excessive thickness of plates and large rivets, in place of which small cylinders or shells of light material with a greater margin of strength can be used more conveniently and with more economical results. Flat surfaces whose strength is dependent on the accuracy in the manner of adjusting a multitude of stays are not suitable for high pressures, especially when a greater margin of strength and safety can be secured by other forms of construction. To place one or more small riveted or welded cylinders within a larger riveted cylinder, and connect the ends of the internal cylinders and

those of the external cylinder to two flat plates; then to heat the inside tubes or cylinders to a higher temperature than the outside one, is mechanically incorrect, unsafe and not durable. It is a waste of

No part of a boiler which does not contain water should be exposed to the contact of the heated gases. A well-designed boiler does not need to dry its steam. Threaded joints should not be used in the

recognized in the face of a half century of prejudice in favor of bad designs, much good will have been done.

### Built-Up and Steel Engine Housings.

Owing to the difficulty in obtaining steel castings of the rather complicated shapes necessary for engine housings, the contractors for one cruiser have adopted the style of built-up housings shown in Figs. 1 and 2.

This housing is made of plate steel and angles united by rivets. The webs are of  $\frac{1}{2}$ -inch plate. The flanges at the front of the housing are of the same thickness; at the lower part of the back they are  $\frac{3}{4}$  inch, while at the upper part of the back they are thickened to 1 inch to receive the guide plates for the crossheads. The top of the housing is a continuation of the thickened back. The feet or bottoms of the columns are made in one piece with part of the back, but are thickened to 1 inch. The rivets used are of steel,  $\frac{3}{4}$  inch in diameter; pitch,  $2\frac{1}{2}$  inches. The engines to which these housings belong are to develop about 2700 horse-power. The cylinder diameters are  $26\frac{1}{2}$ , 39 and 63 inches by 26-inch stroke. The housings present a very light and neat appearance. They are perhaps to a slight extent experimental, but with the careful workmanship that has been put upon them they will no doubt prove reliable. The cross sectional drawings are through the lines A B and E F.

Figs. 3, 4, 5 and 6 are views and sections of a housing for an engine of about 7000 horse-power. It has been successfully made in cast steel. It will be noticed that the legs of the Y, shown in section in Fig. 5, are not of the box form, as usually designed. This change has greatly simplified the casting and has avoided much of the danger of shrinkage cracks. The vertical part of the Y is of box form, as shown by the half section, Fig. 6, the sides of

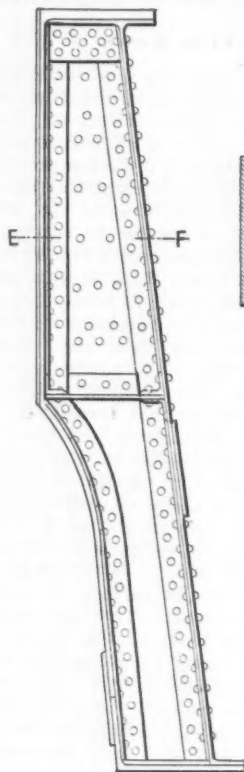


Fig. 1.

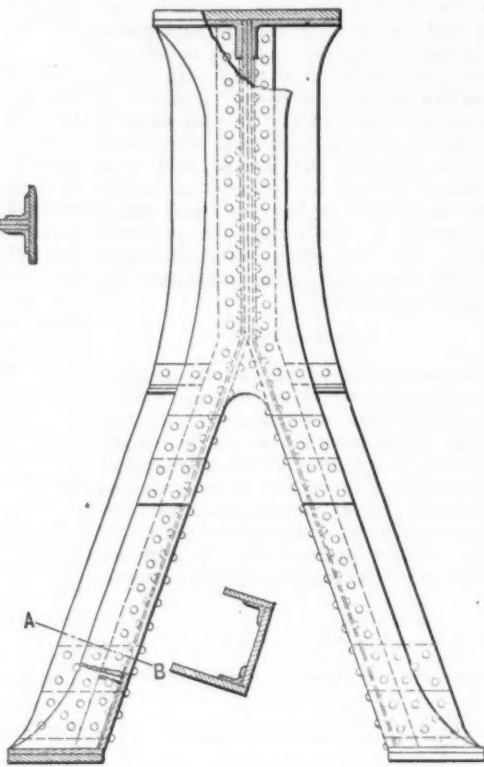


Fig. 2.

### BUILT-UP ENGINE HOUSING.

treasure to use intelligence, labor and material in devising and making various contrivances and makeshifts to delay rather than prevent the destructive consequences of such irregular expansion. This is English practice in the Lancashire boiler.

#### The Best Remedy.

The best remedy is not to use such or similar designs, especially when other designs will give more economical results in construction as well as working. To place a fire directly under one end of a riveted cylinder or shell and elongate the under side by the application of heat while the top remains at its normal temperature is a structural arrangement which is not to be used, because the extent of the strains due to irregular expansion and the consequent weakness involved are unknown. This is the practice in the United States in the horizontal multitubular boiler. To fix two or more parallel tubes between two tube plates, headers or manifolds or shell sides is mechanically incorrect, as no natural elasticity is provided to allow for differences in expansion of some tubes. Stay tubes, differing in thicknesses from the surrounding tubes holding the tube plates, are mechanically incorrect.

#### Manufacture Simplified.

These are some of the principal structural defects to be avoided in designing a steam boiler. None of them are necessary in a good design. Their absence will materially simplify manufacture. There are a few more points which it is well to keep in mind in deciding on the design or merits of a good boiler. There should be a natural elasticity of all parts which should prevent the possibility of an irregular or excessive strain. Tube plates in which tubes are expanded should not be exposed to the direct action of the fire. All tube joints should be metal to metal.

construction of a high-pressure boiler. All openings in shells should be stayed by wrought iron or steel counter pieces. All

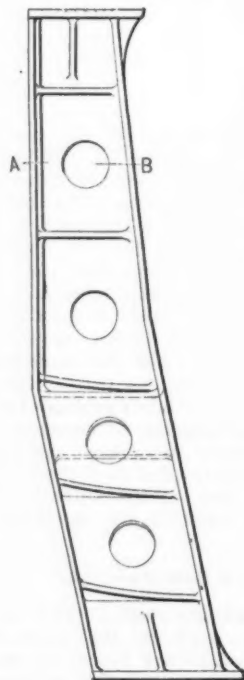


Fig. 4.

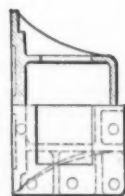


Fig. 6.



Fig. 5.

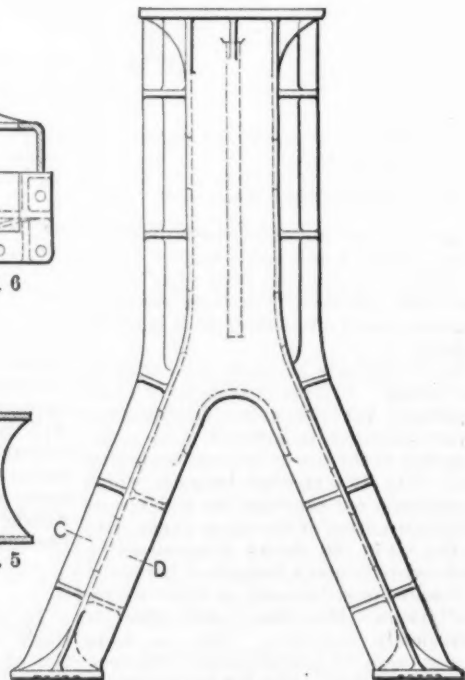


Fig. 3.

### CAST-STEEL ENGINE HOUSING.

parts and all joints should be accessible for cleaning and repairs.

If these remarks assist in causing the merits of some well designed boilers to be

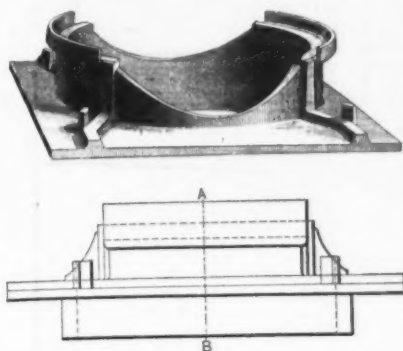
the box being formed by the webs of the legs of the Y. In some frames now being made the vertical leg will be divided in halves along its middle line, thus doing



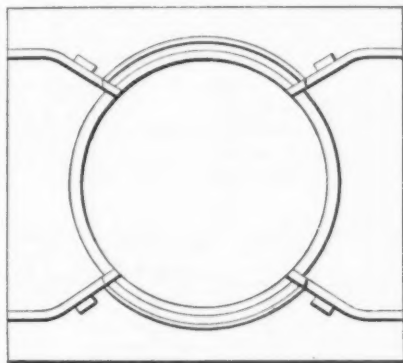
away with the box form of casting throughout the frame. The halves of this frame will be united by flanges and bolts at the front, and by flanges and bolts aided by the guide plate at the back. The minimum thickness called for in the drawings of the frame shown in Figs. 3, 4, 5 and 6 is 1 inch.

### The Holton Furnace Valve.

A common occurrence is the warping or burning out of the bases of gas furnace valves, which has heretofore necessitated the renewal of the whole valve. With the object of making the lower part removable, and thereby saving the upper and expensive portion, which is never subjected to sufficient heat to destroy it, C. H. Holton of the Phoenix Horse Shoe Company,



Side Elevation.



Plan.

### THE HOLTON FURNACE VALVE.

Poughkeepsie, has designed the valve base which we illustrate in the accompanying drawings. The base, it will be observed, is provided with a channel, into which the upper part of the valve is stepped, and in which a gas-tight joint can be readily made. The valve, which is being introduced by the Poughkeepsie Foundry and Machine Company, has been in use at the works of the Phoenix Horse Shoe Company for over a year. Experience there has shown that the main part of the valve has a very long life, and that repairs are needed only for the lower part, which can be cheaply and quickly exchanged.

The Robert W. Hunt & Co. Bureau of Inspection, Rookery Building, Chicago, have been compelled by their increasing business to add to their physical laboratory a 200,000-pound Riehle testing machine. This is one of the largest machines in use by private parties, and is adapted to handling large pieces, now grown to be a common feature of the iron trade. The facilities of the bureau are adequate to any service they may be called upon to render, and although established but a

few years they have already achieved a very high reputation for capability, efficiency and zealous devotion to the interests of their clients.

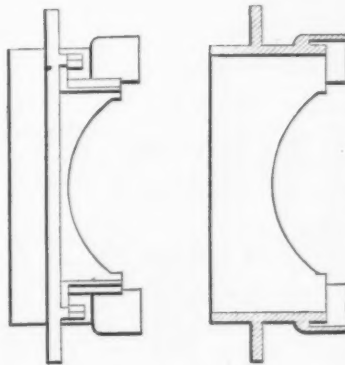
### The Storage of Fuel Oil.

The Chicago Fire Underwriters' Association fought the use of crude oil for fuel for a long time, but of late the consumption has increased rapidly in spite of their action. They have just promulgated the following set of rules to govern the use of oil as fuel, which will be of general interest:

Vault to be located so that the oil it contains can burn out without endangering property and have a capacity sufficient to hold twice the entire quantity of oil the tanks within can contain.

Location of vault to be left to the approval of the Superintendent of Surveys. Distance from any property to be regulated by size of tanks.

Vault to be underground, built of brick, sides and ends to be at least 16 inches thick and to be made water tight with hydraulic cement; bottom to be water-tight, concrete, dished toward center and inclined to one end so as to drain all overflow or seepage to that end, said incline to be to the end opposite to that from which the tank is to be tapped; top to be supported with heavy iron I-beams, with arches of solid brick sprung from one beam to its neighbors, and to have at least 12 inches of dirt over the masonry.



Section through A B.

No tank shall be over 8 feet in diameter by 25 feet in length, nor shall any vault have over two tanks.

When tank is set, the bottom of the tank must be 3 inches above the concrete floor of the vault, and must be in saddles of masonry not less than 12 inches in thickness, built from the concrete floor of the vault, said saddles not to be more than 3 feet apart between centers, and laid in hydraulic cement, with an opening through center for drainage.

Tank must incline 1 inch per 10 feet in length toward the end from which it is to be tapped, said incline of the tank to be opposite to the incline at the bottom of the vault.

The filling pipe, manhole, telltale or indicator, pump supply connection, steam connection, overflow pipe and ventilating pipes, where they connect with tank, must be made petroleum tight by the use of litharge and glycerine cement.

Flanges to make tank  $\frac{1}{4}$  inch in thickness, to be riveted on the inside so as to furnish a satisfactory joint where connections are made, must be used.

Filling pipe connection must have gas-tight valve between the tank and hose coupling, which must be kept closed and locked unless the tank is being filled. Each tank must have ventilating pipes at least  $1\frac{1}{2}$  inches in diameter, one of which must connect with one end of the top of the tank and must be in the form of an inverted J, a union to be placed in pipe just below the bend, within which shall be placed a diaphragm of fine wire gauze; the other ventilating pipe must be at the other end of the top of the tank and must be conducted to the inside of the smoke stack or into the open air at least 10 feet above the surface, so that all the gases that form in the tank will be constantly discharged.

Tank must have indicator to show height of oil in tank at all times, said indicator to be so arranged as to allow no escape-ment of gases from tank.

All pipes leading from the tank to the pump, or place of burning, must incline toward the tank and have a fall of at least 2 feet from bottom of stand pipe to top of storage tank, and must be so constructed that the feed pipe from stand pipe to burners shall be entirely above burners, so that no pockets of oil can be formed in any one of the pipes between the main tank, stand pipe, oil pump or place of burning.

All systems of burning oil for fuel shall use pumps and stand pipe, which shall be within the fireroom; the capacity of the stand pipe shall not exceed 20 gallons, and the overflow pipe shall have one and one-half times the inside diameter of the oil pump suction pipe. All systems to be so piped and constructed that all oil in the pipes and system shall automatically drain to the main tank when the pump is stopped, and cut-off from oil supply pipe must be located outside of the boiler room.

All systems shall have twin pumps so that each one can be used independently of the other.

All pipes within the building shall be placed in plain sight where possible; otherwise shall be placed within a box with movable top, said box filled with dry sand.

The oil pipes and steam pipes between the supply tank and oil pumps shall parallel each other and be placed in the same box.

A Boston paper says the break in rates on west-bound freight by the Canadian Pacific road, by which it abandons the agreement with other roads that has been in force for some time, gives shippers quite an advantage. The classification of freights divided goods into some 25 classes, with varying rates. The reduction is from 5 to 28 cents per 100 pounds to California, according to classification.

Thus boots and shoes, rated as first class, are reduced 28 cents, while cottons and woollens in cases are reduced 14 cents. There is as yet no announcement of a reduction on east-bound freights, but it is expected.

#### Chicago Buildings in 1891.

A summary of the building operations in Chicago for the year 1891 shows a total cost of a little over \$54,000,000, being an increase of 14 per cent. on the work of 1890, and 70 per cent. on that of 1889. The frontage is stated at 280,614 feet, or about 54 miles, which is an increase of 8 per cent. over the previous year, and the two sets of figures show close on \$1,000,000 as the average cost of the buildings to each mile of frontage covered by the 11,476 permits issued during the year. Of course the South Division leads all the rest, building having been stimulated by the wish to make adequate preparations for the fair, but the nearly \$20,000,000 set down to the credit of that part of the city does not include \$8,500,000 worth undertaken in Hyde Park, nor a little more than \$5,500,000 in the town of Lake. The total for the West Division is \$12,360,000, and that for the North \$4,816,000, the work of the three portions of the city proper, as it used to be considered, being separated by nearly \$8,000,000 in each case. For the West Side the value shows a decrease of fully \$1,000,000 in the cost of improvements, but with a larger frontage, and Hyde Park a smaller frontage with an increase of nearly \$2,000,000 in the cost. The month of November was the one in which were taken out permits for the greatest amount of building, its \$8,702,000 being 15 per cent. of the year's total, and nearly equal to that of any two consecutive months preceding October.

The scheme for a ship canal across New Jersey, to connect New York harbor with Chesapeake and Delaware bays, came before the New York Board of Trade and Transportation last week and found many earnest advocates among business men. The commerce of the Delaware is greater than that of the Hudson by nearly 2,000,000 tons, and the canal would enable it to reach the harbor of New York in much less time and at less cost and risk, with consequent lower rates for insurance, than by the Capes of the Delaware. The plan provides for a channel 33 miles long, which is 11 miles shorter than the Delaware and Raritan. There would be three locks on either side of the summit level which would be 50 feet above tide. The cross section is estimated to be 90 feet at bottom, 150 feet at the surface and 20 feet deep, with locks 500 by 60 feet. The total distance would be about 90 miles from New York to Philadelphia—thus connecting by the cheapest known method of communication the most populous centers of the United States—at an estimated cost for the entire line of \$12,500,000.

The Senate Committee on Coast Defense reported in favor of appropriating \$100,000,000, to be extended over ten years. It had received the approval of two successive Secretaries of War, of the Chief of Ordnance under the two Administrations and of the Board of Engineers of the city of New York. The defenses are to consist of floating batteries and torpedo boats of the types recommended by the Secretary of the Navy, submarine mines and such other fortifications as may be deemed proper. There is a requirement that all guns be made at the Government gun factories and that all forgings be of domestic manufacture.

#### The Heron Ingot Manipulator.

Fred. Heron, general manager of the Phoenix Iron Company, Phoenixville, Pa., has designed an ingot manipulator, which has been in use at the works in question for some time past and is now being put in

It will be observed that the manipulator consists of a carriage mounted on V-shaped rails, Fig. 2, run transversely to the line of feed to the rolls. The housings of the mill are indicated in Fig. 2, together with the roll table. The carriage supports a vertical hydraulic cylinder, made of two

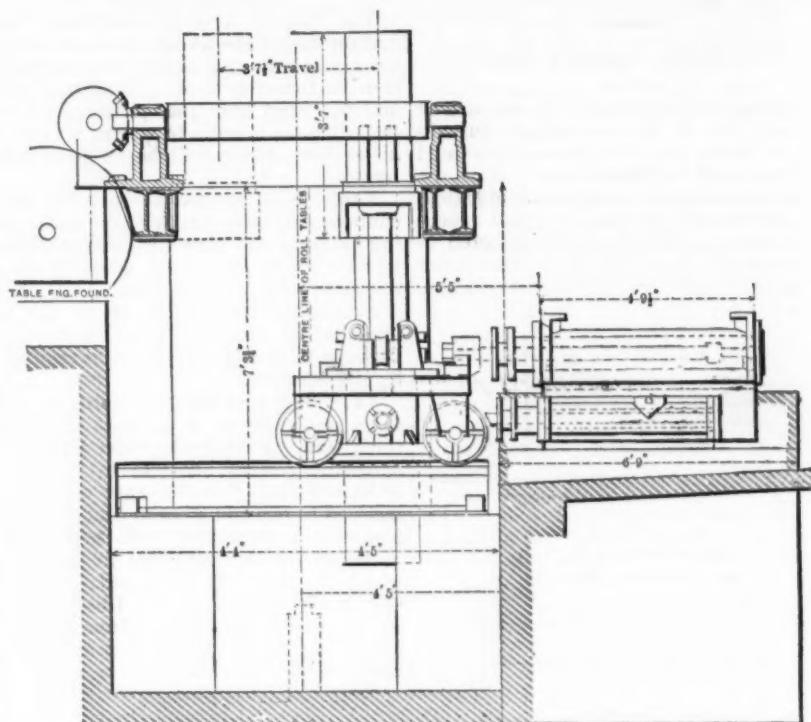


Fig. 1.—End Elevation.

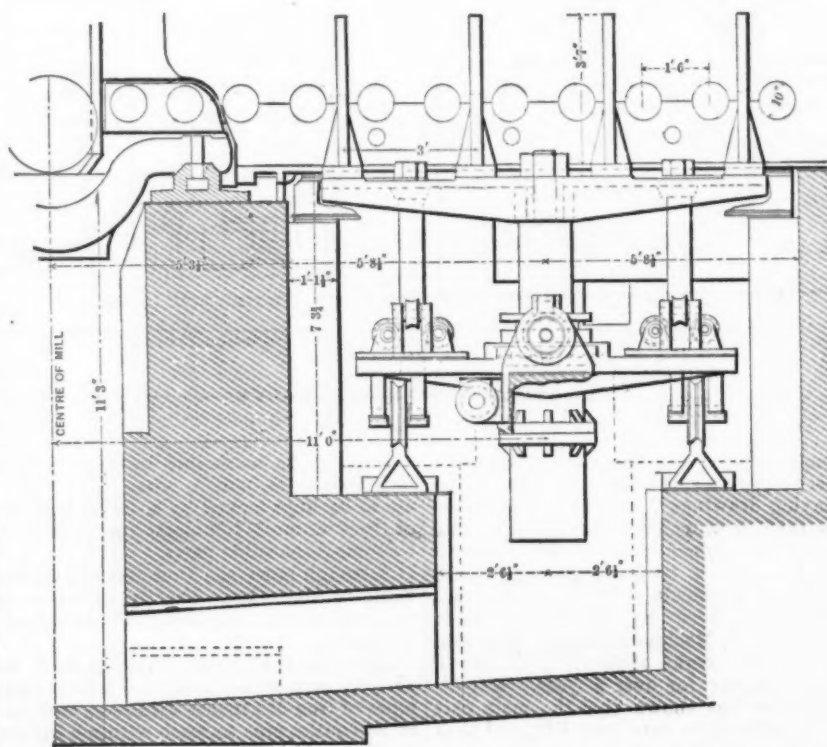


Fig. 2.—Side Elevation.

#### THE HERON INGOT MANIPULATOR.

at the Passaic Rolling Mill Company of Paterson, N. J., by the Leeburg Foundry and Machine Company of Pittsburgh, who have undertaken the construction of the apparatus in this country. The accompanying engravings show the details of the design as being built for the Passaic Rolling Mill Company.

parts, so that the lower one is removable for repairs. Attached to the hollow plunger is a crosshead guided by two rods and carrying four fingers. The carriage is moved laterally by a horizontal hydraulic cylinder, being the upper one shown in Fig. 1. The particular feature of the manipulator is the lower hydraulic



cylinder shown in Fig. 1. Its piston is in reality the water supply pipe of the vertical cylinder on the carriage. As the carriage is moved to and fro by the upper hydraulic cylinder this pipe travels in the smaller lower horizontal cylinder, thus keeping the main vertical cylinder always in connection with the water supply and dispensing with the troublesome rubber tubing used in the majority of manipulators. It will be observed that the load to be manipulated is handled very directly and that the ingot or slab can be moved to and fro and can be turned at will.

We have received from the general freight agent at Chicago of the Illinois Central Railroad Company a fine map of

#### San Francisco News.

The new year has been ushered in by abundant rains, an average in one storm of nearly 8 inches for the entire State. In the south, as usual, the rainfall was less, but taken all in all, there is abundant occasion for rejoicing. Thousands of plows are now and for awhile back have been actively at work in many a valley and on many a hillside preparing the land for the new crop and it is thought that a much greater breadth of land will be put under tillage, wheat principally, than ever before. The fair yields and the good prices of the year have encouraged the farmers and the indispensable cereal will be in favor with the cultivator once more. All this portends a good demand for Eastern

done in this matter, and that quickly, if this city is not to lose a great deal of her pre-eminence in the trade of this coast.

The firm of Dunham, Carrigan & Co., one of those getting into trouble with the Government for importing nails, barbed wire, hardware, &c., from New York by way of Liverpool, London and Antwerp, have made answer in one case—that is, in regard to the importation of 1000 kegs of nails—in which they deny that they have imported American merchandise, or, rather, I should say, carried American merchandise from one American port to another in foreign bottoms. They specify its exportation to a foreign country and its export thence to this country. The representative of the Government sets forth that the answer is insufficient. The arti-

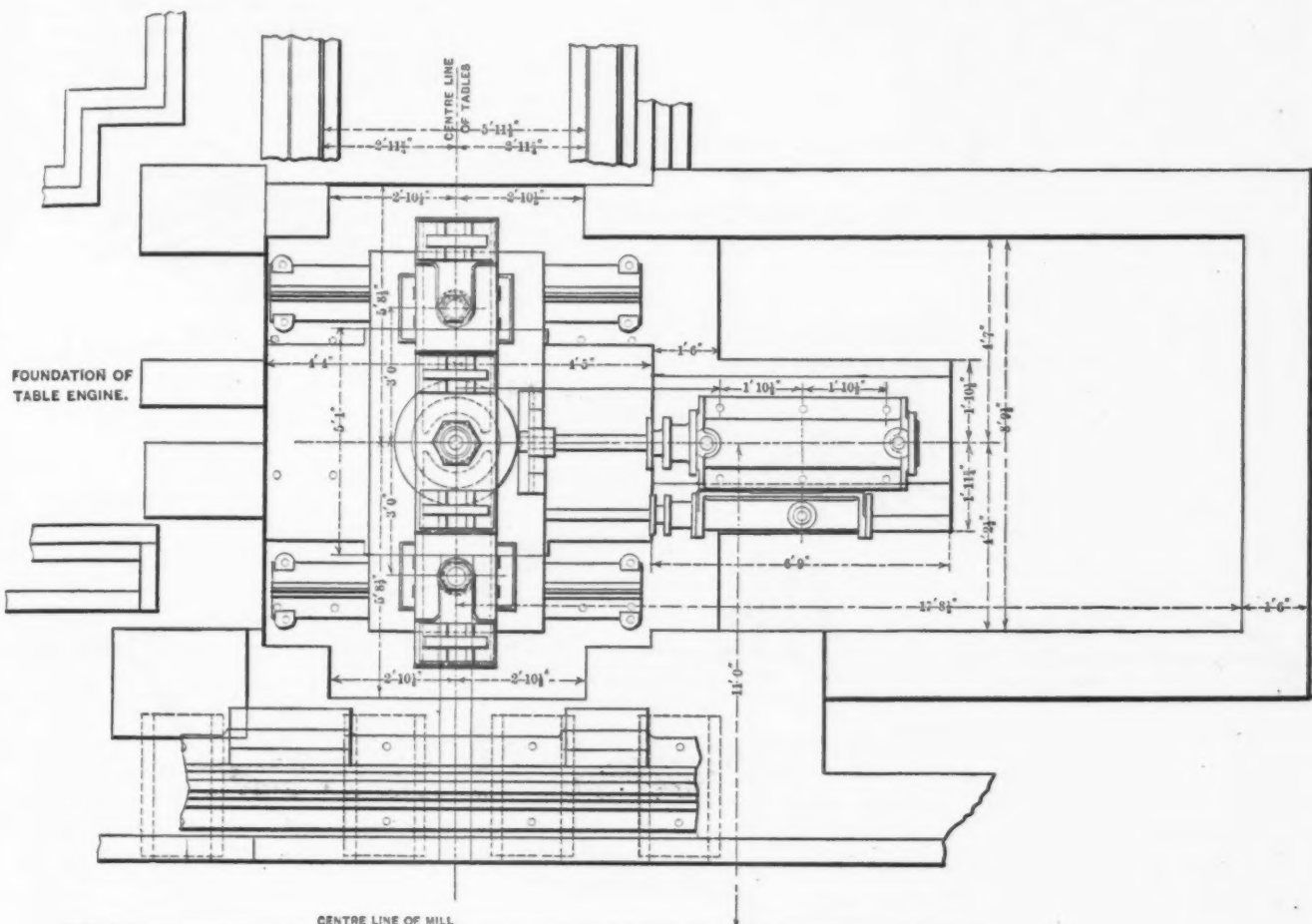


Fig. 3.—Plan.

#### THE HERON INGOT MANIPULATOR.

North and South America, showing the distance from New Orleans to various points in Central and South America, as compared with distances from New York. The map is one of Rand, McNally & Co.'s choice productions, is mounted on heavy cardboard, and is particularly acceptable for office use at this time, in view of the efforts being made to extend our trade with the countries south of us.

Geo. Riley of Braddock, Pa., and P. Foley of Pittsburgh, State Commissioners for the World's Fair, attended a meeting held in Philadelphia last week of the State Manufacturers' Committee on the fair. It was decided that an office should be immediately opened in Pittsburgh, and a secretary appointed to visit manufacturers in that city, and urge them to prepare exhibits for the fair. An office was opened in Philadelphia some weeks since.

hardware, agricultural implements, barbed wire, &c., and when the season comes on the chances are that there will be an unusually good demand for reapers, mowers, harvesters and other modern needs of the harvest field. San Francisco will no doubt participate in the improvement of business, which she needs, as, however it may be tried to be glossed over, 1891 was not satisfactory in this respect to the merchants of this city. A gentleman engaged in a large manufacturing business, where the railroad freight shuts out effectually Eastern competition, remarked the other day that while small storekeepers in small towns within 125 miles of San Francisco could find it more profitable to take in a moneyed partner and divide up profits with him than to buy on time in San Francisco, an instance of which he knew, there must be something radically wrong. The articles imported were barbed wire, nails and hardware of various sorts. It is very evident that something must be

cles the carriage of which in this manner is complained of are precisely those that small country dealers import in carload lots. The only way in which San Francisco merchants can compete is by shipment to some European port and back again. The sympathies of San Franciscans are therefore necessarily with the importers now engaged in this contest with the Government. That they are brought here in this roundabout way is the fault of American railroads, American clipper ships and American steamships. During the past week we have had a number of imports of the same description. There were 8420 packages of wire, 500 reels of barbed wire, 2140 kegs of nails, &c. How much more is on the way cannot now be told, but it is evident that the business was beginning to assume quite a wholesale character.

Outside of these, imports have not been very heavy by sea for the past two weeks. The year closed with fair stocks of almost

all descriptions on hand outside of tin plate. There have been no changes of importance in general markets. Nails are slightly lower, wire nails having been cut down from \$3 to \$2.75 as the base price, jobbing. Nails have been very quiet and dull for some time. Tin plate remains steady at

### The Harris-Miller Carriage and Fall-Rope Carrier.

The Lidgerwood Mfg. Company of New York have perfected and thoroughly tested the Harris-Miller carriage and fall-rope

gravity until it engages a locking stop, which holds the carriage to the stop and frees the lower block, permitting it to descend and receive its load. In hoisting, the lower block rises until its arm enters and is locked to the carriage; this also releases the carriage from the stop on the main cable and it is drawn with its load up the incline until it engages a second stop located above the point where it is desired to deposit the load. This stop also releases the lower block and locks into the carriage, so that the load is free to descend.

The fall-rope carrier, shown in front of the carriage, descends with the carriage down the incline until it reaches the button, shown on the small auxiliary rope above the main cable in Fig. 1. The construction of the button will be understood from Fig. 2. This button arrests further progress of the carrier, which, as the carriage proceeds, serves to support the hoisting or fall-rope at that point. On long spans a series of carriers are used, but up to 250 feet span one is sufficient. The speed of travel varies from 300 to 500

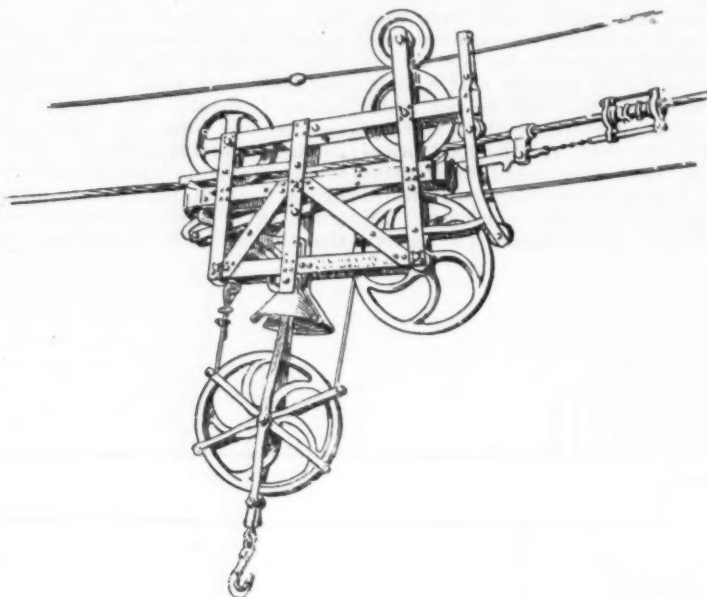


Fig. 1.—Carriage and Fall-Rope Carrier.

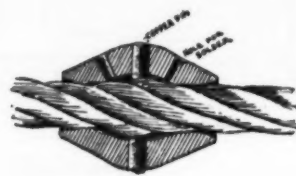


Fig. 2.—Button.

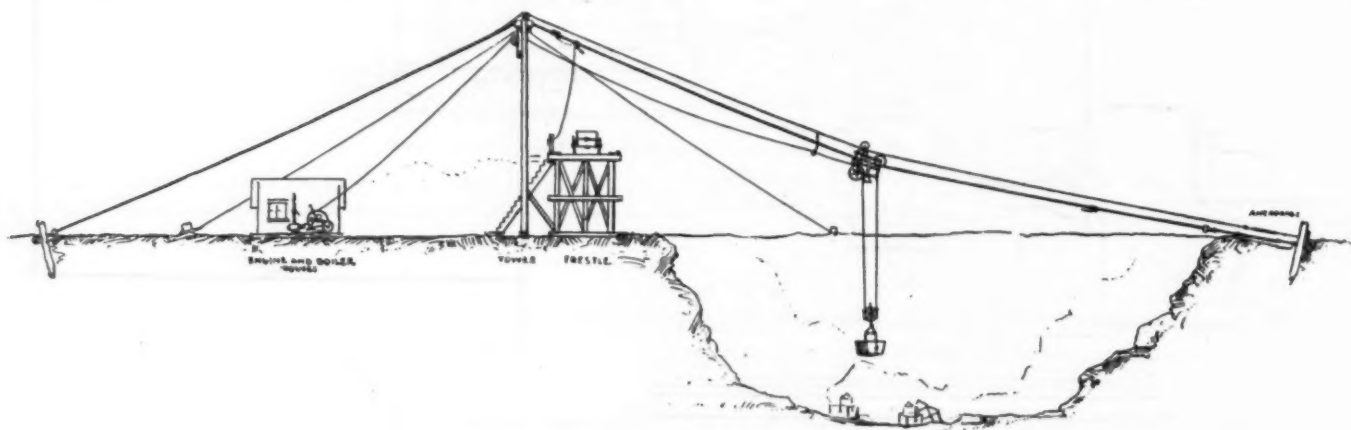


Fig. 3.—Cableway.

prices previously quoted. Late arrivals from Europe brought to hand 5500 boxes tin plate. We have been in receipt of some small parcels of pig tin from the southern portion of the State. The market for Australian is dull at 21 cents.

Arrivals by rail do not seem to slacken in volume. For the past two weeks they have included 81 cars. Of these were 12 cars of iron, 19 cars of steel, 11 cars of hardware, 6 cars of machinery, 4 cars of wire, 1 car of castings, 7 cars of stoves, 4 cars of pipe, 3 cars of agricultural implements, 2 cars of safes, 4 cars steel rails, 3 cars rails, 1 car ranges, 1 car nuts, 1 car axles. A great deal, if not most, of the steel came by rail during the year. A great deal of the iron and machinery was for the Government vessels by the Union Iron Works.

The steamship project of which I have already informed you has taken a considerable hold on the public mind and all the merchants with whom I have spoken favor it. It is being hailed as the only feasible method of competing with the railroads and we have no doubt that when the company is floated its stock will be taken up with alacrity.

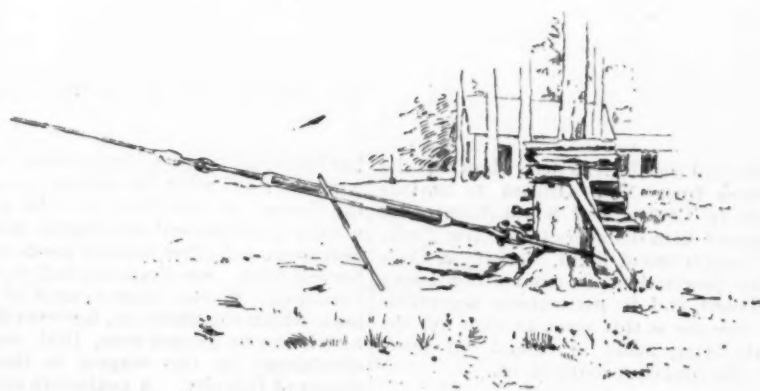


Fig. 4.—Anchorage and Turn Buckle.

### HARRIS-MILLER CARRIAGE AND FALL-ROPE CARRIER.

carrier. The drawings Figs. 1 to 3 show the construction of this carriage, together with a cableway upon which it is designed to operate. In operation the carriage travels down the inclined cable by force of

feet per minute. These carriages are designed with special reference to lightness and strength, since the lighter the carriage the less load the engine must hoist and the greater the saving of fuel. The illus-



tration, Fig. 4, of the anchorage and turn buckle shows a simple and effective way of taking up the slack in the main cable as it accumulates. The turn buckle also assists in the erection of the cable.

### Crossing Two Cars on the Same Track.

In a recent description in *The Iron Age* of the improvement made at the Edgar Thomson Steel Works of Carnegie Brothers & Co., limited, since Charles M. Schwab has been in charge, we alluded to a neat device adopted under peculiar circumstances. The bolcom ends, which drop from the bloom shear, were to be conveyed cheaply to cars standing on the track between two buildings. They are conveyed laterally to an incline, upon which are two cars handled by wire rope haulage. Space did not admit of placing two tracks side by side, so that the problem arose of making the descending car cross the ascending one on the same track. Thomas James, the widely-known assistant superintendent of the works, solved the problem in a manner which may be suggestive and service-

of a channel from the Hudson River through the Harlem River, to the upper end of Randall's Island, 250 feet in width and 15 feet in depth, using such portions as are already excavated.

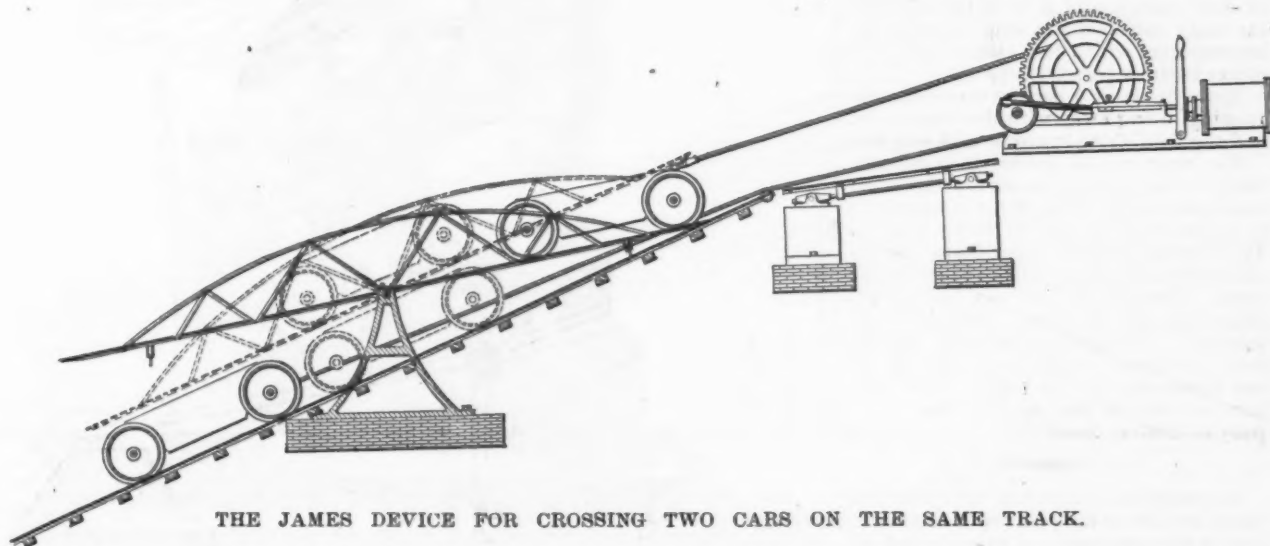
### Lake Ore Shipments.

*Iron Ore*, an Ishpeming, Mich., newspaper prints in detail a record of the ore shipments by lake and all rail for the season of 1891, the total being 7,062,233 tons, of which 663,437 went by rail. The Marquette range leads with total shipments of 2,511,395 tons, of which 1,056,027 tons were shipped from Escanaba and 1,036,148 tons from Marquette, while 300,727 tons went by all rail. The following mines shipped over 100,000 tons:

Marquette range.	Tons.
Angeline .....	241,605
Buffalo .....	479,509
Champion .....	133,413
Cleveland .....	221,788
Iron Cliffs Company .....	278,270
Lake Superior .....	308,331
Republic .....	191,127
Winthrop .....	122,042

The Menominee range has a record of 1,824,552 tons, of which Escanaba shipped

formerly one of the big shippers, sent out but a few thousand tons last season, and has a stock pile of over 100,000 tons. Many of the mines in the Menominee range were also idle, this being particularly true with reference to the western portion of it, where the deposits have been smaller and the ore of lower grade as compared to the Iron Mountain mines and those to the east of them. Escanaba leads the shipping from ports, as it has always done since the opening of the Menominee mines, and is 696,072 tons behind the amount credited to it for 1890. Marquette is 251,328 tons short and Ashland is 962,198 tons behind. Two Harbors records a gain of 11,285 tons, and Gladstone has increased by 41,131. St. Ignace and L'Anse, which were in the list a year ago, have nothing to their credit for 1891, no ore being shipped from those ports. Of the big producing mines, the Chapin falls 254,094 tons short of its shipment of 1890; the Norrie is 148,156 tons behind; the Cleveland is about 80,000 tons short, and the Buffalo mines of Negaunee have made a gain of 91,030 tons. Taking the different ranges, it can be said that they are in better shape to mine ore than ever before.



able to those who are called upon to meet the same difficulty. The accompanying illustration clearly indicates the method followed. A swinging section of track is provided, pivoted as shown. Let it be assumed that the lower car drawn in full lines is ascending. At that time the descending car in full lines has just mounted the oscillating track. When the ascending car has reached the position indicated in dotted lines the descending car has tipped the track sufficiently to clear the way for the ascending car. As soon as it goes further the empty car tips the track downward, making the way clear for the full car and preparing for itself the means of passing on to the main incline track. The appliance works very neatly and smoothly, and, as we have stated, is evidently applicable in similar circumstances.

A huge new depot building for the joint use of the New York Central and New Haven Railroads is contemplated, the cost to be something like \$1,000,000.

The Harlem ship canal project has reached another stage of development. Congressman Ketchum of New York, on Friday introduced a joint resolution authorizing the Secretary of War to contract with Charles Stoughton, or with Stoughton and such other parties as he may associate with himself, for the construction, at a sum not exceeding \$970,000,

1,480,248 tons, while 132,222 tons went from Gladstone and 212,082 tons all rail. The leading producers were:

	Tons.
Chapin .....	488,749
Commonwealth .....	134,982
Dunn .....	162,721
Ludington .....	141,308
Curry .....	100,681

The Gogebic range slightly exceeds the Menominee range, having shipped 1,834,747 tons, of which Escanaba captured 423,697 tons, Ashland took 1,261,658 tons, and 149,392 tons went all rail. The record of the largest mines follows:

	Tons.
Ashland .....	267,439
Carey .....	121,186
Mount Hope .....	105,607
Norrie .....	758,572
Pabst .....	130,226

The Vermillion range produced 891,539 tons, divided between the Minnesota, with 517,570 tons, and the Chandler, with 373,969 tons, all but 1240 tons, which went by rail, going from Two Harbors.

"Of most importance is the falling off noted in the business of the year as compared to that of the one previous, 1890, it amounting to 1,961,347 gross tons. Of this shortage Marquette district is credited with 502,148 tons; Menominee with 457,685 tons; Gogebic with 1,013,039 tons. Vermillion shows a gain of 10,285 tons. The shrinkage of the Gogebic product is very great, there being a general retrenchment all along the line. The Colby,

Many of the properties have added materially to their facilities for ore-hoisting, the mines are generally in good condition and are able to meet any demand the market may make upon them."

The twelfth meeting of the Ohio Institute of Mining Engineers will be held at Columbus on the 21st and 22d of this month. The programme includes an annual address by the Hon. Anthony Howells, president of the institute, the report of the secretary and treasurer, R. M. Haseltine, and the following papers: "Comparison of the Composition of Certain Coals with their Evaporating Powers in Locomotive Boilers," Prof. N. W. Lord, O. S. U., Columbus, Ohio; "The Necessity of Making Breakthroughs Even and Uniform at the Mines," James W. Haughee, ex-Dist. Mine Inspector, Nelsonville, Ohio; "Mining Limestone by Underground Instead of Open Quarry Work," E. B. Willard, mine supt., Hanging Rock, Ohio; "The Harrison County Oil Fields," Wm. B. Hanlon, chief engineer C. L. and W. R. R., New Philadelphia, Ohio; "The Use of the Prismatic Compass in Mine Surveying," E. D. Wileman, C. and M. E., Mansfield, Ohio.

The old foundry and rolling mill known as the Frankford Arsenal is being fitted with machinery for the manufacture of missiles for use in big guns.

### The Beaudry Cylinder Power Hammer.

This hammer is the result of long experience and extended experiments by those understanding all the details of forging. Its principal claim to favor is stated to be the superior elasticity of the blow struck by it. This is accomplished by a new device that is both simple and effective, which allows the hammer the greatest freedom of throw on the down stroke, but the instant the blow is struck the hammer is made to rebound so quickly that the work is not cooled in the least. The carrying frame is guided by new parallel motion which requires no adjusting, and insures smoothness of action as well as durability. All parts requiring it are so arranged that they can be adjusted instantly, and without trouble. The hammer always stops at the upper end of the stroke, leaving the anvil clear and ready for the work.

The whole machine is heavily built, is self-contained, and requires only a foundation of a moderate size.

The operator controls the hammer by means of a treadle, or lever, enabling him to adjust the blow from the heaviest to lightest with the greatest nicety, also long or short strokes, and at will the operator can make one blow and stop instantly, an improvement which it is claimed no other power hammer possesses.

It can be set up wherever there is a shaft running, doing away with the steam pipes, and the liability to freeze in cold weather.

The hammer is so guided in a cylinder that it is sure to come down exactly in the same place every time, and it is thus fitted to do fine work as well as heavy forging. The relative position of the frame and anvil is such as to make it convenient to operate. Bars of 20 feet can be worked either way of the dies. It is accurately balanced. The anvil is entirely separate from the frame, doing away with all jar and concussion to the frame. This hammer is made by the Beaudry Tool Company of Boston, Mass.

Accounts from the South show that low prices for cotton have a depressing influence in all departments of industry and the effect is more apparent when the facts become known that the crop just matured is diminished little if any in comparison with the tremendous yield of 1890. The South in 1891 furnished one-fourth of the failures in the entire country and the same proportion of liabilities, while in the previous year the failures numbered only one-fifth of the total, and the amounts involved were in still smaller proportion. Even with the disadvantages of which complaint is made, last year the 14 Southern States from Maryland to Texas, including Missouri, made an increase of \$320,000,000 in their valuation of property for taxation—an advance of 7 per cent. Since 1880 these States have advanced their taxed valuation \$1,900,000,000. Now that the spirit of speculation has in a measure subsided, and that a special effort is making to diversify the industries, improvement is likely to continue.

A new beam-testing machine, modeled after the one at Watertown Arsenal, is in course of construction for the Boston Institute of Technology. Its capacity will be 300,000 pounds, that of the machine now in use being only 50,000 pounds. Professor Lanza expects to make some very extensive experiments on riveted joints and beams with this new apparatus.

*Stahl und Eisen*, the famous German metallurgical publication, has changed from a monthly to a semi-monthly.

### THE WEEK.

Iowa easily led all the other States last year in the quantity of cereals produced and the area devoted to grain crops, and yet that fertile State, a Cleveland paper says, which harvested over 480,000,000 bushels of corn, oats and wheat, or 240 bushels for every man, woman and child within its boundaries, used only 14,158,755 acres, or 22,128 square miles, out of the 56,025 square miles which it contains, in the production of these three cereals. That is to say, the champion grain-growing State of the Union could more than double its best yield of grain if all its tillable soil were used and well cultivated.

Harlan & Wolff, the iron shipbuilders of Belfast, Ireland, have now under construction for the Atlantic Transport Line, owned by the Baltimore Storage and Lighterage Company of Baltimore, four

United States during the month of December, 1890, and during four months ended December 31, 1891, as compared, are, in totals, as follows: The number of pounds exported for the period named in 1890 was 1,555,683,775, valued at \$156,319,434; for the period named in 1891 the quantity was 1,581,500,332 pounds, valued at only \$141,477,972. That is, 26,000 more bales exported this season, yielded \$15,000,000 less money than the smaller quantity exported a year ago.

Louisiana sugar planters express satisfaction with the bounty system and predict good crops. The bounty paid up to January 1 was \$993,000.

The wheat harvest in the Argentine Republic, which will soon be in market, is the largest ever known.

There are 30,000 locomotives in the United States, of which 16,000 are employed in hauling freight. The number



THE BEAUDRY CYLINDER POWER HAMMER.

freight steamships that will be among the largest running to American ports. The steamers are to be 445 feet between perpendiculars, and the estimated gross tonnage of each steamer is 5600 tons, while the net tonnage is 3610 tons. They will have refrigerating apparatus, steam fans, powerful derricks and steam winches for handling cargo. The vessels' machinery will consist of two sets of triple-expansion engines, driving twin screws, the estimated horse-power being 3200, and the speed from 13 to 13½ knots per hour.

C. M. Carey, of the New York firm of Paige, Carey & Co., who have the contract for building the great bridge at Wheeling, W. Va., last week fell from the structure and was swept away by the flood.

Maine's Chicago building is to be a grand exhibit of the building material of the State, and it is doubtful if any other State will be able to show so many different kinds of granite and slate as are to be used in its construction.

Great losses are experienced in the South in consequence of the low price of cotton. The Chief of the Bureau of Statistics reports that the exports of cotton from the

of tons of freight carried during the year ending June 30, 1890, was 636,541,617; the number of tons carried 1 mile was 76,207,047,298. This shows the average haul per ton to have been 119.73 miles. Freight-train mileage was 435,170,812, showing the average number of tons per train to have been 175.12. The revenue for carrying a ton of freight 1 mile was 0.941 cent; the cost of carrying a ton of freight was 0.604 cent.

The building record of San Francisco for 1891 shows an investment of \$47,240,000 in new structures, which is much behind the record for 1890, but above the average for previous years.

Rich ore and coal fields will be opened in the spring by an extension of the Northwestern Railroad about 400 miles from Fort Casper to Ogden City, Utah.

The House Coinage Committee, though in favor of free silver, do not wish to be precipitate. They would go slowly.

The Russian engineers who have been engaged in surveying for the Government railroad through Eastern Siberia are passing through the United States on their return to St. Petersburg. The chief engi-



neer of construction, Alexander Ryhoff, speaks of the magnitude of the work, which he expects to see completed within 12 years. The road will be little less than 10,000 miles long, built at a cost of about \$200,000,000, and will be Russia's first and only railroad to the Pacific Ocean.

The Philadelphia Trades League adopted resolutions urging the importance of the Atlantic and Gulf Coast waterway, the first link being the proposed canal between the Delaware River and Raritan Bay.

The Governor of Maryland says the experiment of expending money on the Chesapeake and Ohio Canal in the hope of making it pay has been a costly one to the State. Worse yet, instead of having competing lines of transportation to the coal fields, both are under the same control.

Once more the French Government has refused to lend any money or credit to the Panama Canal project.

The Chicago and Alton will expend \$500,000 in improving their road for the World's Fair.

Louisiana from 1880 to 1891 has grown in taxable wealth from \$177,096,459 to \$235,700,000, an advance of \$48,604,000, or 27 per cent.

The total amount of money expended on the new State Capitol at Albany thus far is \$19,100,000.

For the current year the New York State tax is \$5,196,666.40, the rate being 1½ mills, and the valuation of property \$3,779,393,746. This rate of tax is the lowest that has been levied by the State since the year 1855.

Newark city in New Jersey has commenced receiving a water supply from the Upper Paquannock River at the rate of 8,000,000 to 10,000,000 gallons a day through a new pipe. It is a riveted pipe made of steel varying in thickness from ¼ inch at the lowest point to ½ inch on the mountain top. Each joint consists of four 7-foot sheets of steel with a double riveted lateral seam and single riveted circumferential seams. This is the first big sheet-metal pipe ever laid in the East. Nothing remains to be done (barring the repaving) but to thoroughly test the pipe and put a roof on the recently built gate house at the hill reservoir in South Orange avenue, Newark, an accessory of the Belleville basin, to which a 3-foot steel pipe has been laid.

In the year 1891 there were landed at this port 430,894 immigrants, of whom Ireland furnished 35,951; England, 22,820; Germany, 79,496; France, 4189; Russia, 52,022; Poland, 27,500; Switzerland, 6264; Sweden, 32,826; Norway, 10,500; Italy, 65,087; Denmark, 9024; Hungary, 25,433; Austria, 27,433; Bohemia, 8074. The remainder from other countries.

Boston merchants last week met numerous representatives of South American countries at a banquet at the Vendome Hotel, and much enthusiasm was manifested in favor of reciprocal trade. Speeches were made by ex-Postmaster Thomas L. James, the Mexican Minister and Senor Peraza of Venezuela. W. E. Curtis, secretary of the American Bureau of Republics, speaking of what has been accomplished, said five republics and nine colonies have signed commercial treaties, representing 21,000,000 of people and a foreign commerce of \$500,000,000 a year, and American corn, bread and bacon will soon be found on every breakfast table in Europe.

The making of guns, large and small, is rising to a high rank among American industries. The gun foundry at Washington is pressed with work to the limit of its capacity and the first of its products, a

100,000 pound "peace preserver," is now en route across the continent to the Pacific Coast. Work on the new gun factory of the Government at Watervliet, near Troy, N. Y., is progressing satisfactorily and the north wing is now occupied.

The Pacific Coast will have two new revenue cutters costing together \$325,000, if a bill passed by the Senate last week should become a law.

While Representative Andrews of Massachusetts introduces a bill in Congress favoring free ships, the New England Ship Owners' Association, who claim to represent the shipping interests of Boston, remonstrate against giving an American registry to foreign-built tonnage.

The latest notable instance of "watering stock" is found in the history of the Brooklyn elevated railroads, respecting which it is alleged, with an appearance of truth, that they have been capitalized at nearly \$39,000,000, although their cost but little exceeded \$6,000,000:

Road.	Stock and bonds.	Actual cost.
Kings County.....	\$9,475,250	\$1,500,000
Fulton.....	1,621,000	325,000
Brooklyn and Union Consolidated.....	27,510,000	4,500,000
Total.....	\$38,606,250	\$6,325,000

Otherwise stated, 18 miles of road that cost, according to sworn testimony, about \$250,000 a mile to build, are now capitalized at the rate of more than \$1,500,000 per mile, which is sharp financiering.

Congress is growing economical. The fate of some of the numerous applications for appropriations from the Government Treasury is indicated by the passage, on Friday, of Mr. Holman's resolution declaring against the granting of subsidies or bounties and limiting expenditures to such as are manifestly necessary to carrying on the several departments. In the vote party lines were almost obliterated.

The new home of the Brooklyn Polytechnic Institute was opened on Friday with due ceremony. It cost \$350,000.

The Carillos Coal and Iron Company and the Santa Fé Railroad are co-operating in building 75 miles of track through the coal fields between Carillos and San Pedro.

Engineers say a tunnel could be built between Whitestone or College Point, L. I., to connect with the Housatonic Railroad opposite, passing through solid rock, opening a more direct route to New England.

A bill to remove the duties from barbed wire of all kinds and iron rods for fencing was introduced in the House on Friday by Mr. Bryan of the Ways and Means Committee.

Great expectations in regard to the future growth of the oil trade are indulged by Philadelphia. The building of two direct pipe lines from the Pennsylvania oil fields, one to Point Breeze and the other to Marcus Hook, encourage the hope that a larger proportion of the export traffic may be centered at that port. The course of the export trade during the last three years appears from the following:

	1889.	1890.	1891, Jan. 1 to Dec. 31.
Philadelphia.....	3,168,745	3,185,924	3,940,258 34.59 %
New York.....	8,607,281	8,871,059	7,272,467 63.55 %
Baltimore.....	173,210	278,648	178,022 1.56 %
Total.....	11,949,236	12,335,636	11,390,747

Philadelphia now claims nearly half of the bulk trade, but concedes that in the shipments by barrels and cases New York has decidedly the lead, its barrelexports being four times as great as Philadelphia's and its case trade three times as great. These branches of the export trade are of greater value to a city than the bulk trade, as they necessitate the employment of

many more men, who find work in making the barrels and cases and in handling them.

The Canadian Pacific and Soo lines have come to an agreement on transcontinental business, and all apprehension concerning rates is allayed. This is the most important feature that has come to the surface in many months, because it establishes friendly relations with the Northwestern group of railroads. Commissioner Midgley says that a settlement has been arrived at on the Missouri River rates, which will be advanced February 1. The new rates will be on the \$1.40 basis—the highest figures that have prevailed in years.

A large first-class fire-proof office building at least ten stories high will be erected on the northwest corner of Broadway and Duane street under a 40 years lease from the Weld estate to the Mutual Reserve Fund Life Association. The estate's interest will be about \$1,100,000, including \$500,000 for the land.

On the Mississippi River and its tributaries, comprising 17,000 miles of navigation, there are 7,445 vessels of an aggregate capacity of 3,393,379 tons, valued \$15,338,000. They carried in 1889 freight to the amount of 29,405,046 tons.

Factory Inspector Connelly appeared before a Federation of Labor meeting at Albany in answer to a resolution requesting his attendance, but denied the right of any labor organization to try him for his actions, alleging that he was responsible to the proper authorities alone. He was charged with appointing non-union men.

The new rates for coal tonnage adopted by the Vessel Owners' Association last week at Boston are the lowest ever known in the trade. Last year the official rate from Philadelphia to Boston was \$1.05, but shipments were made as low as 50 cents per ton.

Sir Richard Cartwright, the Liberal leader in Canada, in a public address denied the charge of discrimination against Great Britain. The trade returns show that the duty collected on English goods amounted to 22½ per cent., while on goods from the United States the duty collected amounted to only 14½ per cent., owing to the larger amount of free goods imported from the States than from Great Britain.

The Northwestern Miller reports the official output of flour by Minneapolis mills for the year 1891 at 7,877,947 barrels, against 6,988,430 barrels in 1890; 6,688,865 barrels in 1889, and 7,074,830 barrels in 1888. The direct exports of flour to foreign countries for 1891 were 3,038,065 barrels, against 2,097,035 barrels in 1890.

The present population of Newfoundland and Labrador is 202,000. The increase in seven years is only 2½ per cent.

Social reunions of the American Society of Mechanical Engineers will be held on January 28, February 25, March 31 and April 28, the first reunion grouping itself around reminiscences of the Ericsson monitor. The twenty-fifth meeting of the society will be held in the city of San Francisco, Cal., the professional sessions beginning on Monday, May 16, and lasting four days. A special train will leave New York on May 4, the attendance at the meeting entailing a minimum absence of 21 days.

A pamphlet has been issued by Henry C. Rew, entitled "The State of the Art in the Manufacture of Illuminating Water Gas," being a record of a series of contracts entered into by Henry C. Rew and the Consolidated Gas Company of New York.

# The Iron Age

New York, Thursday, January 21, 1892.

DAVID WILLIAMS, - - - PUBLISHER AND PROPRIETOR.  
CHAS. KIRCHHOFF, - - - EDITOR.  
-GEO. W. COPE, - - - ASSOCIATE EDITOR, CHICAGO.  
-RICHARD R. WILLIAMS, - - - HARDWARE EDITOR.  
JOHN S. KING, - - - BUSINESS MANAGER.

## Southern Iron in the Northwest.

It is easy to prophesy, but it is another matter entirely to read the future. Southern coke pig iron continues to be sold largely in the Northwest despite the predictions so often made of late years that it was destined soon to be shut out. The advent of more local producers in the Northwestern field has not had the expected effect. It seemed to be a perfectly natural conclusion that in a time of restricted trade the competition of local makers would be so great that the Southern companies would find themselves cut out completely. Such a period has just been experienced. Low as the Northern irons were sold, the Southern makers manfully met the situation, and made prices accordingly. There have been some very large contracts placed within the past two or three months which the Northern furnacemen were anxious to get, but which were captured for Southern makers. It has been claimed so long that the low prices realized for Southern iron would land the producers in bankruptcy, while as yet there has been no general financial embarrassment among them, that this tune is about worn out and is seldom heard. The persistence with which the South keeps up the fight, with undoubtedly a very light margin of profit, is beginning to elicit admiration for the pluck of its manufacturers.

The fact is conceded, however, by those who handle Southern pig iron in the Northwest that they have not had their share in the increased consumption of pig iron in that territory. There has been a tremendous growth in this respect within the past five years. The manufacturing interests of the Northwest have gone forward with great strides in that time, and have carried with them an ever-increasing demand for pig iron. This enlarged demand has been met by the increased number of local furnaces making foundry pig iron. Five years since there was but one concern, the Chicago Furnace Company, making foundry pig iron at Chicago, and it ran but one stack, finding the market a tight squeeze sometimes in placing this limited output. Later the Bay View furnaces at Milwaukee were diverted by the North Chicago Rolling Mill Company to the manufacture of foundry pig iron, but rather intermittently. After the organization of the Illinois Steel Company the production and sale of foundry pig iron became a regular part of their business. The Northwestern Iron Company and the Minerva Furnace

Company then entered the field for local favors, but did not continue so regularly as the others. The past summer the Iroquois Furnace Company joined the ranks of the Chicago furnacemen and are now an important factor in the field. With this steady advance in the production of local pig iron the Southern coke iron trade in the Northwest has remained nearly stationary, but it has nevertheless held its own quite remarkably under the circumstances.

The representatives of Southern furnaces assign special reasons for their failure to gain a good slice of this increased business. Price has played a much less important part than would be imagined. The great hold which Northern manufacturers have secured upon the local trade has been by their willingness to make long contracts. It is not uncommon, but quite the reverse, for a large consumer to place his requirements for a whole year with a Northern furnace company. This is done even when prices are very low. The Southern companies are for the most part disinclined to do this. Occasionally a company can be found which will make such a contract, but it is an exception. The consequence is that the large consumers, who have been educated to anticipating their full season's requirements, only take one-third or one-fourth of the Southern iron which they would take if they could contract for the whole year. But this is not all. It is alleged that the Southern companies act as if they looked upon their Northwestern trade as merely a temporary matter. They do not regard their patrons as in any sense their customers, whose favor it is desirable to cultivate and preserve. This is not a new development, but is a peculiarity which has been noted for years. It might be supposed that by this time they would have been convinced that they could retain a considerable portion of Northwestern trade and that it would be well to adopt the measures necessary to accomplish that purpose.

## Our Enormous Exports.

The enormous exports for December last make a phenomenal feature in the foreign trade of the United States. The figures, as compiled from the statistics of the Bureau at Washington, compare for the second half of the two years as follows:

July 1 to December 1.	1890.	1891.
Breadstuffs.....	\$54,806,213	\$155,989,193
Cotton.....	162,461,785	152,352,969
Petroleum.....	30,008,676	24,050,795
Provisions, &c.....	84,836,510	75,952,670
Total for six months....	\$332,113,164	\$408,345,637

Including miscellaneous exports the total valuation for the month of December is likely to exceed \$115,000,000, whereas, never before until October last did the aggregate exceed \$100,000,000. The improvement in December was almost wholly due to the movement of breadstuffs, for while the shipments of cotton were much larger than in 1890, the valuation was less, owing to the unprecedentedly low prices. The enormous volume of the breadstuffs movement is more clearly

shown by the statistics for six months, the exports of wheat during that period having been 95,000,000 bushels, as against less than 23,000,000 during the corresponding months in the previous year. Corn exports for the same time, when compared, show little difference, the total being 18,000,000 bushels. In mineral oil alone among the staple export commodities is there a marked decline, the valuation having dropped from \$51,657,000 in 1890 to \$45,357,000 in 1891.

## The Chicago Smoke Nuisance.

The force of public opinion is now being demonstrated very perceptibly in the abatement of the Chicago smoke nuisance. From a condition of apparently hopeless apathy the people have suddenly been aroused by the vigorous appeals of some of the most influential daily papers, and an organization of prominent business men has been formed which will co-operate with the authorities in endeavoring to suppress the formation of smoke. The movement was inaugurated a month since, and sufficient time has elapsed to show that it is not merely spasmodic, but promises to become potent in effecting this needed reformation. A peculiarity of this uprising of the citizens against the nuisance created by some of their number is the marked improvement already visible in the downtown section of the city. Before the new organization had been able to get itself into good working order, or its enthusiastic promoters were quite sure as to what they would undertake to do, the owners of many smoky chimneys discovered how to cure them. They either put in smoke consumers or else gave their firemen imperative orders to fire more carefully. So much was accomplished in this way without an attempt to enforce the city ordinances that great confidence is now entertained in the conversion of the greater part of the remaining offenders against the cleanliness of the city. It is announced that ample funds have been subscribed for the maintenance of the citizens' organization, that agents will be employed to investigate and report upon smoky chimneys, and that the city authorities will be assisted in prosecuting offenders. The scheme is somewhat similar in character to that of the Society for the Prevention of Cruelty to Animals.

## Regulating Cotton Production.

The cotton growers, at a convention held in Memphis to consider a plan by which the production of cotton may be reduced, fixed the basis of the reduction desired, declaring that the best returns were to be obtained by cutting down the cotton acreage 20 per cent. Beyond this they called upon merchants and bankers to co-operate in bringing about the reduced acreage, and intimated that while the advice of bankers will have much influence, the refusal of discounts on their part to farmers who exceed their percentage would be still more effective. As to the workings of the plan, Southern jour-



nalists express some misgivings. Tempted by the promise of higher prices, individual planters may attempt to profit from the reduced acreage of their neighbors, and thus in the general result the difficulty may be aggravated rather than relieved. Again, there is danger that rivals in other cotton-growing countries may be stimulated to greater exertion, and thus the United States lose its grip on the cotton markets of the world. Moreover, a reduced consumption would be the natural effect of higher prices, inviting the disaster which it was designed to avert, by throwing the entire industry into confusion. It is too soon to repeat the folly of the Farmers' Alliance.

### Reciprocity vs. Retaliation.

The President of the United States is authorized to adopt retaliatory measures and to levy a duty on goods now free when he fails to make a satisfactory treaty with a foreign power. Venezuela and the Philippine Islands are liable to suffer for their tardiness in accepting overtures from this country. It is intimated that necessity rather than choice may have influenced their course of action, either on account of the low state of their revenues, which forbade concessions, or on account of prior obligations to other Governments of a conflicting nature. In any case there are some persons who are so unreasonable as to think that if in consequence of retaliation \$10,000,000 of coffee and \$7,000,000 of sugar are annually lost to this market the penalty will fall quite as much on the home consumer as on the foreign producer. The countries affected by the retaliatory clause of the new tariff, which the President is empowered to enforce, are Venezuela, Colombia, Nicaragua, Honduras, Hayti, Austria-Hungary and the Philippine Islands, the value of whose imports during the fiscal year 1890 makes an aggregate of \$23,584,104, as appears from the following tabulated statement:

Country.	Coffee.	Sugar.	Goat skins.	Other hides.
Venezuela.	\$9,062,207	\$5	\$270,274	542,073
Austria-Hungary.		1,577,244	36,646	1,415
Colombia.	1,849,441		24,077	606,022
Hayti.	1,370,247		21,144	9,247
Nicaragua.	642,467		660	154,157
Honduras.	39,456		304	32,907
Philippine Islands.		6,817,857		6,254
Total.	\$13,463,818	\$8,395,106	\$353,105	\$1,372,075
Grand total.	\$23,584,104			

The value of the exports to the various countries above named for the same time amounted to \$14,500,000. The outward movement from this country must be curtailed to some extent should new obstacles be raised to freedom of trade. The uncertainty existing at present in regard to the future policy of Venezuela and Colombia is spoken of by merchants in the trade as seriously deranging business until a better understanding can be reached. They claim that discrimination by the respective governments in favor of the United States must necessarily be followed by concessions equal in extent to European governments with whom they have treaty relations. But these countries may discover some method by which they can extricate themselves from an unpleasant dilemma.

### Excessive Damages for Injury.

In the estimation of Judge Moran of the Appellate Court of Illinois there is too great a tendency among jurors to return excessive verdicts against corporations for damages. He gave expression to the following views recently in handing down an opinion:

There is a noticeable tendency to large verdicts in injury cases in this country within the last three or four years which should be checked and judgments kept within moderate limits. Large damages in such cases are the result of the sympathy which judges and jurors, in common with the majority of men, feel for the pain and suffering of the victims. The limit of compensation for any actual pecuniary loss—such as loss of time, deprivation of ability to earn a livelihood, and necessary expenses incurred—is greatly exceeded in a vain attempt to measure pain and suffering and balance it by a reward in money. Here the field of absolute conjecture is entered, and, with no rule to guide the judgment, the verdict is reached by pure and frequently by most generous guessing. The tendency to gross verdicts is such that, if it does not receive a check, the bankruptcy of corporations liable in this class of cases must follow.

The popular doctrine with regard to corporations has been but mildly expressed by the able judge. There are few jurymen who are not inclined to strain a point and mulct a corporation heavily when they have the opportunity, the impression prevailing that any "company" is wealthy, and a poor man who sues it deserves all he can get from it. To such an extent has this been carried in some localities that every expedient is tried to prevent injury cases from getting into the courts. One of the most novel of these is the engagement of an insurance company to handle such cases and settle them on the most favorable terms which can be secured.

### Factory Insurance Rates.

There is much dissatisfaction in insurance circles over the unremunerative business of the past few years. The year just closed seems to have been so much worse than any of its predecessors that matters have about been brought to a climax. It would not be surprising to see at an early day a general advance in rates, as well as the adoption of more stringent regulations governing the classification of risks. Among other things insurance experts have been of late giving their attention to the percentage of loss in factories, and have come to the conclusion that in too many cases the insurance companies have been confronted with total losses. This is ascribed mainly to defective construction. A large floor area in a great manufacturing building may be very desirable in many respects, but it is regarded as very objectionable as a fire risk. There are large establishments having wood shop, paint shop, tin shop and machine shop all in one room, or practically so, as the partition walls will be but slight frame work or perforated by a number of doors. When such factories take fire the flames sweep over the whole floor with a fierceness which usually prevents firemen

from saving anything. The underwriters are likely to take up just such questions as this. They will insist that factories be divided into departments, isolated as much as possible, with fire walls between them, and having fire-proof doors which will always be shut except when in actual use, or else rates will be put very much higher than they have been. One would suppose that manufacturers themselves would adopt the department plan, rather than run the risk of being completely burnt out in case of fire and thus having their business wholly suspended, but the fact is that they regard fire as a possible danger only, with a very remote probability that their own place will be subjected to its ravages. Hence they are disposed to consult convenience in manufacturing rather than subordinate this important matter to the creation of fire checks.

### OBITUARY.

WALTER ABBOTT WOOD.

Walter Abbott Wood died January 15 at his home in Hoosick Falls. Mr. Wood was born in Mason, Hillsboro County, N. H., on October 23, 1815. His father, Aaron Wood, was a manufacturer of wagons and plows. In 1816 the family removed to the neighborhood of Albany. Walter obtained some rudimentary education in the district schools of Albany County and served an apprenticeship to the trade of wagon and plow making in his father's shop. When he was 20 years old he went to Hoosick Falls and secured employment as a journeyman machinist. Soon after he engaged in business for himself in a small way, and until 1852 he made plows and castings for machinery. As early as 1848 Mr. Wood had entered upon experiments with mowing machines, and was among the first to secure patents. But he did not succeed in perfecting a machine which he deemed suitable to put upon the market until 1852. In that year two were completed. As they proved satisfactory, he began manufacturing on as large a scale as possible. During the succeeding year he made and sold 300 machines. About this time he purchased a right to manufacture the Manny mower and reaper, which he afterward greatly improved. His business increased each year until the Walter A. Wood mowers and reapers were known in every civilized land. In 1865 he formed a stock company. Mr. Wood received signal official honors not alone from his own country, but also from European governments. He was decorated was the Imperial Cross of the Legion of Honor by Napoleon III at the Paris Exposition of 1867 for his important services to agriculture. At Vienna, in 1873, he received from the Emperor of Austria the Cross of the Imperial Order of Franz Josef. He was elected as a Republican to represent the Troy district in the XLVIth and XLVIIth Congresses.

WILLIAM WALSH BRESLIN.

J. M. King & Co., Waterford, N. Y., very gracefully announce the death, at his home, January 8, of William Walsh Breslin, in the thirtieth year of his age. Mr. Breslin had from early boyhood been identified with the firm, and had for several years past been superintendent. It is stated that whatever measure of success has attended the firm is in a great degree due to Mr. Breslin's ability, zeal and untiring energy, and his sudden death is deeply regretted.

## The Coke Trade.

For the year 1891 the coke trade was less in volume than that of the three preceding years. It was also less than the trade of 1888, when the capacity of the Connellsville region was one-quarter less than it is now, but owing to the price of coke being fairly maintained at \$1.90 per ton, the price established at the first of the year 1891, the cash returns were larger than those of any other year in the history of the trade, with the single exception of the year 1890. The aggregate output of the Connellsville region last year was 4,929,960 tons, which at \$1.90 per ton would represent an income of \$9,366,944. Other considerations, however, make it safe to say that the output of the Connellsville region for 1891 yielded the operators the sum of \$10,000,000. For the year 1890, which in point of production was the largest in the history of the region, the output was over 6,000,000 tons, valued at the ovens at nearly \$13,000,000. The coke production of the Connellsville region and the value of the same for the past six years were as follows:

Year.	Tons made.	Value.
1886.....	4,109,331	\$5,876,343
1887.....	4,296,343	8,413,672
1888.....	4,971,287	5,965,544
1889.....	5,825,826	8,156,156
1890.....	6,221,518	12,903,940
1891.....	4,929,960	9,366,944

It is stated that two-thirds of the output of the region for 1891 was shipped during the last half of the year. The average shipments during this period were slightly greater than those of the corresponding period of 1890, and were up to the average of that year. During the first half of 1891 the long coke strike took place, during which the shipments were exceedingly small. The shipments of February, March, April and May aggregated less than 32,000 cars, while the shipments for December, 1890, fell only a few thousand cars short of the shipments for the above four months. The prices of coke for the past seven years are given in the following table:

Month.	1885	1886	1887	1888	1889	1890	1891
January.....	\$ 1.10	1.20	1.50	1.75	1.25	1.75	1.90
February.....	1.10	1.35	2.00	1.75	1.25	1.75	1.90
March.....	1.10	1.35	2.00	1.50	1.25	2.15	1.90
April.....	1.20	1.35	2.00	1.00	1.15	2.15	1.90
May.....	1.20	1.50	2.00	1.00	1.10	2.15	1.90
June.....	1.30	1.50	2.00	1.00	1.10	2.15	1.90
July.....	1.20	1.50	2.00	1.00	1.00	2.15	1.90
August.....	1.20	1.50	2.00	1.00	1.00	2.15	1.90
September.....	1.20	1.50	2.00	1.00	1.35	2.15	1.90
October.....	1.20	1.50	2.00	1.00	1.50	2.15	1.90
November.....	1.20	1.50	2.00	1.25	1.75	2.15	1.90
December.....	1.20	1.50	2.00	1.25	1.75	2.15	1.90

During the year 1891 oven building in the region was quite active, nearly 1200 new ovens having been erected, increasing the total number of ovens in the region from 16,020 to 17,204. The prices which were established at the first of the year 1891 are still in force, and are as follows: Furnace coke, \$1.90; foundry coke, \$2.30; crushed coke, \$2.65, all per ton of 2000 pounds, f.o.b. at ovens in Connellsville region. Freight rates per ton of 2000 pounds from the Connellsville region, which includes any part of it, to the principal points of consumption are as follows:

To Pittsburgh.....	\$0.70
To Mahoning and Shenango valleys.....	1.35
To Cleveland, Ohio.....	1.70
To Buffalo, N. Y.....	2.25
To Detroit, Mich.....	2.35
To Cincinnati, Ohio.....	2.65
To Toledo, Ohio.....	2.35
To Louisville, Ky.....	3.20
To Chicago, Ill.....	2.75
To Milwaukee, Wis.....	2.85
To St. Louis, Mo.....	3.35
To East St. Louis.....	3.20
To Baltimore.....	2.17
To Boston.....	4.00

Prices of the different grades of coke are quoted for delivery at these points as follows:

Point.	Furnace.	Foundry.	Crushed.
Pittsburgh.....	\$2.60	\$3.00	\$3.35
Valley points.....	3.25	3.65	4.00
Cleveland.....	3.60	4.00	4.35
Buffalo.....	4.15	4.55	4.90
Detroit.....	4.25	4.65	5.00
Cincinnati.....	4.55	4.95	5.30
Toledo.....	4.25	4.65	5.00
Louisville.....	5.10	5.50	5.85
Chicago.....	4.65	5.05	5.40
Milwaukee.....	4.75	5.15	5.50
St. Louis.....	5.25	5.65	6.00
East St. Louis.....	5.10	5.50	5.85
Baltimore.....	4.00	4.40	4.75
Boston.....	5.97	6.37	6.72

It is not expected that there will be any changes made in the prices given above for some time. Shipments from the Connellsville region are quite active, and average about 7000 cars per day.

## Harveyized Rails.

Since August, 1891, two rails have been lying in the track of the Delaware, Lackawanna and Western Railroad at Scranton which have been treated by the Harvey cementation process, the idea being to have the top of the rail, which is exposed to wear, hard, while the balance of the rail remains soft and is not subject to danger from breakage. The following analyses give the carbon at different depths:

Depth.	No. 1 rail.	No. 2 rail.
Inches.		
1-16.....	0.76	0.76
2-16.....	0.42	0.42
3-16.....	0.33	0.31
4-16.....	0.30	0.30
6-16.....	0.30	0.30
8-16.....	0.33	0.30
10-16.....	0.30	0.27
12-16.....	0.30	0.28
1.....	0.27	0.26
1 4-16.....	0.27	0.26
1 8-16.....	0.27	0.25
Flange.....	0.24	0.27

The railroad officials report that the Harveyized rails show less wear and flow of metal than other rails subjected to service under the same conditions.

Again it is reported that certain members of the Pig Iron Manufacturers' Association of the Mahoning and Shenango valleys have decided to manufacture their own coke. The report states that three of the largest pig-iron manufacturers in the Mahoning Valley and two in the Shenango Valley have joined forces and have secured options on some extensive coal lands, situated in Fayette County, Pa. It is probable that additional information regarding this move will be forthcoming in a short time. The above organization has been notified that its request for lower rates on coke from the Connellsville region to the Mahoning and Shenango valleys, and on pig iron from the valleys to Pittsburgh and Cleveland, has finally been refused by the Central Traffic Association, which met at Chicago last week. The principal reason assigned by the railroads for the refusal to grant lower rates is that if the rates to and from the valleys were reduced it would be necessary to reduce rates to other points. It is not believed that any further attempt will be made by the furnacemen in the valleys for some time to secure lower freight rates.

La Grange Furnace, at Stribbling, Tenn., has shut down on account of the low price of iron.

Capt. McDougall has invented a whale-back for coast defense service. It can be submerged by means of water ballast, so as to leave visible only the bow or snout, on which are mounted the heavy guns, so arranged as to disappear below after discharge.

## CORRESPONDENCE.

## The Manufacture of Tin Plate.

To the Editor: In addition to your very excellent reasons in your issue of January 7 why more American tin plates have not been produced, it would be well to add the most important one, and one which we have not seen in any newspaper. It was useless to make them, as stocks existed in this country on July 1, 1891, sufficient to supply consumption for the remainder of the year, and even now they are excessive in many kinds.

Very respectfully,

N. & G. TAYLOR COMPANY.

PHILADELPHIA, January 12, 1892.

## The Jones Annealing Process.

During the past few years the Jones annealing process has been in continuous use at the works of the Russell & Erwin Mfg. Company, New Britain, for annealing bright cold-rolled steel for lock plates, bolts and hinges, steel wire, tool steel of all grades and sizes, as well as various articles of cutlery. A good deal of work has been done for other firms, among them the Stanley Works, Landers, Frary & Clark and the Stanley Rule and Level Company of New Britain, Conn., the Pratt & Whitney Company of Hartford, Miller, Metcalf & Parkin of Pittsburgh and Wetherell Brothers of Boston. The process is the invention of Horace K. Jones, 35 Springstreet, Hartford, Conn. The process consists of avoiding oxidation during annealing by using a non-oxidizing gas. Mr. Jones keeps the retort in which the annealing is done in communication with a gas holder or gas main, allowing the gas to expand back into the main. The articles thus annealed come out bright, and need not, therefore, be pickled. It has also been the practice to re-anneal by this process all of the tool steel used in a large machine shop, although already annealed at the steel works where made, and the slight additional expense has been found to be more than compensated by the ease with which the steel is worked, and by the saving in wear of the cutting tools. It was also noticed that if metal which had been blued or slightly oxidized was subjected to the annealing process it came out bright, the oxide being reduced by the action of the gas.

## PERSONAL.

J. W. Bartlett of Montreal, long known as an ardent advocate of the development of Canada's iron industry, has become general manager of the American Association, Limited, at Middlesborough, Ky.

Peter Wright of Marquette has accepted the position of Michigan Commissioner of the World's Fair.

S. W. McMunn has been appointed special railroad agent for Carnegie, Phipps & Co., Limited, of Pittsburgh, Pa. Mr. McMunn's headquarters will be at Pittsburgh.

Henry Phipps of Carnegie Bros. & Co., Limited, sailed for Europe recently.

W. E. C. Coxe has resigned the post of general manager of the Columbus and Hocking Coal and Iron Company at Columbus, Ohio, to take effect February 1.

The members of the Verein Deutscher Eisenhuettenleute, who took part in the visit to this country last year, have presented a handsome silver cup to W. P. Shinn, Dr. R. W. Raymond and C. Kirchhoff. It represents Vulcan carrying a Bessemer converter on his shoulders.

W. F. Pinkham, who some time since severed his connection with the White-stone Forge, will soon go abroad.



## MANUFACTURING.

### Iron and Steel.

The annual meeting of stockholders of the Andrews Brothers Company, proprietors of Haselton Iron Works and Haselton Furnace, at Haselton, Ohio, was held last week, at which the following directors were elected: C. H. Andrews, L. E. Cochran, James Neilson, John A. Logan, Jr., Upson A. Andrews. The directors elected L. Cochran, president and treasurer; H. W. Heedy, secretary.

The New Castle Tin Plate Company have been organized at New Castle, Pa., with a capital stock of \$150,000. The incorporators are W. S. Foltz, Jno. Stevenson, Jr., Geo. Greer, Jno. Fahnlne, Frederick Lehberger, M. S. Marquis, J. F. Cunningham of New Castle and S. W. Cunningham of Pittsburgh. As soon as the necessary organization has been effected, it is the intention of the new company to erect a plant at New Castle for the manufacture of tin andterne plates.

Again the announcement is made that there is a possibility of some of the iron and steel plants in Youngstown, Ohio, being sold to an English syndicate. It will be remembered that mention of this matter has been made in these columns several times. Last week S. M. L. Godfrey returned to Youngstown after a long visit to England, and announced that he was prepared to negotiate with some of the manufacturing concerns in that city with a view of buying their plants in the interest of an English syndicate. While such transfer of interests may be made, it is the impression among the manufacturers of Youngstown that nothing will come of the negotiations.

The E. & G. Brooke Iron Company of Birdsboro, Pa., have announced a general reduction in wages of their employees. Puddlers have been reduced from \$3.50 to \$3.15 a ton, sheet employees from 40 to 36 cents and nailers about 10 per cent. The firm give employment to about 400 men.

Announcement is made that there has been a reorganization of the Cumberland Steel Company, located at Cumberland, Md. It is also stated that this reorganization will include the establishment of several subsidiary industries. Among them are the Lehigh Spring Company, who have made a removal of their railroad and spiral spring plant from Lehigh, Pa., to Cumberland. The plant will be located adjacent to the works of the Cumberland Steel Company, and will be large consumers of the steel made by that firm.

We are officially advised that the Riverside Iron Works of Wheeling, W. Va., among the largest cut-nail manufacturers in this country have decided to abandon the manufacture of cut nails. The principal reason given for this action is the active competition from wire nails, while other reasons have also had an influence on the firm in taking this step. The nail factory of the Riverside Iron Works is the second to the largest in the country, it containing 224 nail machines, while the largest in the country is that of the Laughlin Nail Company, also of Wheeling, W. Va., which contains 226 nail machines. The manufacture of cut nails by the Riverside Iron Works, while, of course, amounting to a large business every year, was only a department of the interests of that firm. As is well known to our readers, this concern are large manufacturers of Bessemer, forge and foundry irons, soft steel and all kinds of steel and wrought-iron pipe. Their blast furnaces, Bessemer steel plate mill and tube departments are located at Benwood, W. Va.; their bar mills, forge and coal mines at Wheeling, their nail factories and warehouses are also located in Wheeling, while they operate a blast furnace and coal shaft at Steubenville, Ohio.

The Joliet Sheet Rolling Mill Company of Joliet, Ill., are reported to have secured the necessary capital for the erection of their plant. A site has been selected, the plans are being prepared for the mill, and construction will be pushed as soon as spring opens.

The suit of the People's Natural Gas Company of Pittsburgh against the Braddock Wire Company of that city, whose plant is located at Rankin Station, Pa., was on trial in the courts at Pittsburgh last week. The case is an action to recover \$23,000 under a contract for furnishing natural gas to the defendants' works. The gas company contracted to supply the defendants with natural gas at a rate of so much per ton of material used by the wire company. The contract covered a space of three years, and under it the plaintiffs claim there is still due them a balance of \$23,000. The defendants deny that there is anything owing, and assert that they have paid in full. The question of the difference arose out of the construction of the contract. The plaintiffs claim the contract means so much for each

ton of raw material used, and the defendants assert that it means so much per ton of finished material. As the amount of raw material exceeded that of the finished, the plaintiffs claimed the difference, amounting to \$23,000 in three years, was still due them.

Considerable newspaper notoriety has recently been given to the Homestead Steel Works of Carnegie, Phipps & Co., Limited, at Homestead, Pa., over the discharge of 14 men employed in the shearing department. These men were requested to do certain work which was directly in their line of duties, but refused to do so, and left the mill in a body. The men were discharged by Supt. John A. Potter, and their places filled by other workmen. On account of the discharge of these men, newspaper reports have been widely printed to the effect that the cause of the discharged workmen had been championed by the Amalgamated Association, and unless the men were reinstated this organization would order a strike at the works, which would involve about 4000 men. We are reliably informed that there is no truth whatever in these reports. The matter was investigated by the Executive Committee of the Amalgamated Association, and the action of the firm in discharging the men was sustained. The men were discharged for good and ample reasons, and will not be taken back into the employ of the firm. Their places have been filled, and the mill is now being operated as usual.

The rolling mill at Iron Gate, Va., started its four double puddling furnaces on the 12th inst., J. C. Tahaferro being superintendent. On the same day T. C. Jones, manager of the blast furnace, started the Iron Gate Furnace.

A. J. Forbes-Leith, Jas. C. Morse and Nathaniel Thayer are calling for proxies for the annual meeting of the stockholders of the Illinois Steel Company, which will be held in Chicago on the 10th of February.

The Midland Steel Company of Muncie, Ind., have under contract a 24-inch sheet train, consisting of 5 mills and cold rolls for making tinning and a general line of sheets and light plates for the market. They advise us that the capacity of the plant will be from 10,000 to 12,000 tons per year. The mill will probably be running during the latter part of April or early in May.

The Belleville Steel Company, St. Louis, held their annual meeting on the 14th inst. and elected the following board of directors: T. A. Meyenburg, B. S. Adams, F. W. Oliver, George O. Carpenter, Jr., W. W. Waugh, E. A. Meyenburg and R. F. Waugh.

The Tudor Iron Works, St. Louis, Mo., held their annual meeting on the 14th inst., and elected the following board of directors: T. A. Meyenburg, B. S. Adams, George S. Edgell, George O. Carpenter, Jr., and F. W. Oliver.

The Syracuse Steel Works, at Syracuse, were destroyed by fire 7th inst. The loss is \$45,000.

The bell foundry of A. Fulton's Son & Co., located in Pittsburgh, has been leased to the Department of Public Safety of that city for a term of five years. It is the intention to erect a water tower to protect the lower portions of Pittsburgh from fire.

In the courts of Pittsburgh last week an order was handed down in the equity suit of Carnegie, Phipps & Co., Limited, against the Philadelphia Natural Gas Company. This was an action brought to prevent the defendant company from cutting off the supply of natural gas used by the firm in their Upper and Lower Union Mills in Pittsburgh. Judge Collier overruled the demurrer of the company to the suit of Carnegie, Phipps & Co., Limited, and ordered the defendants to answer the plaintiffs' bill and continues the injunction against the defendant company, restraining them from shutting off gas from the mills of the plaintiffs. The latter are required to give an indemnity bond of \$100,000, and the suit will now proceed.

A charter has been issued to the Ramona Iron and Steel Company of Bellevue, Pa., with a capital stock of \$60,000. The directors are F. Z. Shallenberger of Pittsburgh, Jas. W. White, S. M. Graham of Bellevue, and others.

The Junction Iron Company and Laughlin & Junction Steel Company, both located at Mingo Junction, Ohio, have decided to erect an electric light plant.

Girard Furnace, at Girard, Ohio, will be enlarged and improved; the bosh, which was 18 feet, increased to 20 feet, and the stack raised 4 feet, making it 80 feet high. It is expected to make the new furnace capable of producing 250 tons a day, and to have it in blast by March 1.

The furnaces of the Powelton Iron Company, at Saxton, Pa., together with all appurtenances, limestone and ore lands located in Bedford and Huntingdon counties, will

be sold at trustee's sale at the Philadelphia Exchange on March 9 next. The furnace plant consists of two stacks, No. 1, 70 x 18 feet, built in 1881, equipped with three 70 x 18 Whitwell stoves, and No. 2 stack is 71 x 17 feet, was built in 1887 and has three Whitwell stoves, each 60 x 18 feet. The plant produces No. 1 foundry pig, and it is said can be put in operation inside of two months.

The stockholders of the Ellis & Lessig Company of Pottstown, Pa., have elected the following officers: President, George B. Lessig; secretary, Joshua B. Lessig; treasurer, William S. Ellis. Board of Directors: George B. Lessig, Wm. S. Ellis, Joshua B. Lessig, Thomas Searies and Frank Wickersham.

The Roanoke Iron Company, at Roanoke, Va., have completed and started their 16 double-puddling furnaces. The plate mill building is erected, the machinery contracted for, and operations will commence during the summer.

### Machinery.

The extensive works of the Thomas D. West Foundry Company, Cleveland, Ohio, were almost entirely destroyed by fire on the 13th, and the loss is due chiefly to damage to the machinery and patterns. A large number of the latter were received recently to carry out some contract work. The total loss is in the neighborhood of \$25,000. The company comprises George H. Boyd, president and treasurer, and Thomas D. West, superintendent and manager. The foundry was one of the largest in Cleveland, and had a melting capacity of 75 tons per day.

Byram & Co., Detroit, Mich., manufacturers of the Colliu cupola furnace, have recently shipped one of their furnaces to the Leland Stanford, Jr., University, Palo Alto, Cal., together with other foundry supplies.

The Jonson Foundry and Machine Company, East 118th street, New York, is reported in financial difficulties and Julius Elson, the treasurer, has been appointed receiver on the application of Julius Jonson, the president. The company some time ago entered the field as a competitor for naval shipbuilding and did considerable work for the Government on the boat Axalia. The nominal assets are reported to be about \$75,000, while the liabilities are about \$50,000. The company was principally owned by Messrs. Jonson and Elson. They expect to reorganize it.

The Union Foundry and Machine Company of Pittsburgh are building some of the tin-plate machinery to be used in the new tin-plate plant of the Blairsville Rolling Mill and Tin Plate Company, now in course of erection at Blairsville, Pa. Included in the machinery which this firm are erecting at Blairsville is a new improved pickling machine.

H. K. Porter & Co., manufacturers of light locomotives, with offices at 543 Wood street, Pittsburgh, and works located at Fifth and Railroad streets, in that city, have applied for space in the World's Fair, Chicago.

The States Machine Company, formerly at Newark, N. J., are now located at Hartford, Conn., where they occupy a new shop, 200 x 45, well lighted and specially arranged to suit their requirements. The specialty of this concern is the States boring and milling machine.

The Berlin Iron Bridge Company of East Berlin, Conn., are just completing a new machine shop for the Bridgeport Machine Tool Company, at Bridgeport, Conn. The building is made entirely of brick and iron, divided into two parts, each 40 feet wide, the total length being 96 feet. One portion is two stories high, the roof and floor being designed for light work, while the opposite half of the building is of the same height, but the second floor is omitted, so that it may be used as an erecting shop. The erecting shop is controlled by a traveling crane.

Western papers announce that another Eastern manufacturing concern which has decided on establishing a Western basis of operations is the firm of A. J. Sweeney & Son, now operating at Wheeling, W. Va. This firm has just contracted with the Harvey Land Association for the establishment of a plant at Harvey, the new manufacturing suburb of Chicago. A tract of 5 acres, bounded by the Calumet Terminal and Grand Trunk railroads and Robey and Lincoln streets, has been allotted to the new company. On this site three large brick buildings will be erected at once. The company now manufacture machinery for making plate glass, traveling cranes, cut and wire nails and architectural and structural iron. They contract to employ an average of 300 men at a minimum annual pay roll of \$180,000.

Charles Kaestner & Co., manufacturers of machinery, are making excavations just south of the Crane Elevator Works on South Jefferson street, Chicago. The company intend to build a big factory, which on the ground floor will contain 32,600 square feet of space.

Throughout the structure room to store goods occupying 2,808,000 cubic feet of space will be made. The new factory will be of irregular shape. Fronting the east on Jefferson street, it will extend 100 feet. In depth it will be 186½ feet, the rear doors and windows opening into Law avenue. Another structure 100 x 93 feet and facing on Law avenue will be added. The third building faces on Jefferson street and will be 59 feet in frontage and 93 feet in depth. The entire factory, comprising the three buildings, will be constructed of pressed brick and iron, with cut-stone trimmings. It will cost when complete \$175,000.

The new plant of David S. Cresswell's Eagle Iron Foundry in Philadelphia was formally opened last Thursday. The machine shop is 40 x 54 feet, three stories high, and the foundry proper 60 x 144 feet.

The extensive works of the Thomas D. West Foundry Company, at Cleveland, were destroyed by fire on the 13th inst. The building was of frame, two stories high, and was entirely consumed. The loss was about \$25,000, a considerable portion of this being in damage to machinery and patterns. A large number of the latter had been recently received to carry out some contract work.

Under date of January 12 the Fort Scott Foundry and Machine Works Company of Fort Scott, Kan., announce that at the annual meeting of the stockholders of this company, held on January 12, 1892, the corporate name of the Fort Scott Foundry and Machine Works Company was, by unanimous vote of all the stockholders, changed to that of the Walburn-Swenson Mfg. Company, and the business will hereafter be conducted under that name; the capital stock of the company was also increased to \$300,000. The works of the company and their principal office will continue at Fort Scott.

Otis Brothers & Co. have been awarded the contract for building the elevators for the new post office building in Pittsburgh, the work to be finished in six weeks. There will be three passenger elevators and two freight elevators.

The Solid Steel Company of Alliance have recently turned out castings for the largest lathe in the world, which is being built by William Sellers & Co. of Philadelphia, for the naval gun shops at Washington. The part turned out there is the face plate, which is constructed of cast steel and weighs 16,000 pounds. It is provided with four adjustable steel jaws and a gear wheel, which has 75 teeth of 4-inch pitch and 10½-inch face. Fourteen speeds, ranging in exact geometrical progression from 0.4 to 4.3 revolutions per minute will be obtained with a cutting pressure on a 50-inch diameter of 140,000 pounds.

The Whittier Machine Company will build a machine shop 140 x 82 feet at Granite and First streets, Boston. The building will be of brick, with monitor roof.

At South Lawrence, Mass., the Emerson Mfg. Company have begun the erection of a new machine shop. The main building will be 375 x 40 feet and the foundry 100 x 60 feet.

The American Nail Machine Company's works, at Findlay, Ohio, have been almost totally destroyed by fire, involving a loss of \$30,000. The works had recently been purchased by the Wellington Mfg. Company of New York, who were remodeling them preparatory to putting in a steel car manufactory.

The Lancaster, Ohio, Iron Works, recently purchased by the Indiana Iron Works of Muncie, Ind., are being removed to the latter city.

The round house, machine shop and blacksmith shop of the B. & K. R. R., at Bradford, N. Y., have been burned. The loss is \$25,000.

The boiler-making firm of Tippet & Wood, at Phillipsburg, N. J., have been incorporated, with a capital stock of \$20,000.

It is said that the affairs of the Goshen Boiler and Iron Works, at Goshen, Ind., which have been in the hands of a receiver for some time, are in a fair way to being straightened out and the works operated with a full force.

The plant of the Houghton Foundry and Machine Company, at Toledo, Ohio, has been damaged by fire to the extent of \$25,000.

#### Hardware.

M. C. Lilley & Co. of Columbus, Ohio, have just completed a building for their use, the offices in which will be elaborately finished in hardwood, plate glass and polished art brass. The contract for furnishing the latter has been awarded to E. T. Barnum, Detroit, Mich. This art brass work will be made from special designs, and will doubtless be gotten up with Mr. Barnum's usual excellence.

The Champion Safety Lock Company, Cleveland, Ohio, in a fire which recently de-

stroyed their plant, suffered a loss of about \$15,000. In their former location, on the corner of Water and St. Clair streets, they were burned out about a year ago.

S. W. Kent, Meriden, Conn., has had a very satisfactory trade since the winter set in. Mr. Kent advises us that his Blizzard ice creeper is regarded with the most favor in those sections of the country where slippery weather comes and goes frequently, and mentions that the demand has been especially good in Wilmington and Washington.

F. E. Kohler & Co., successors to the Chieftain Company, Canton, Ohio, advise us that their trade in hardware specialties has been very good during the past season, and that the outlook for spring business is excellent. The sales of the Royal saw set have exceeded their expectations, while they also allude to the gratifying reception which has been accorded to their vegetable masher and curry comb.

The works of the Canton Saw Company, Canton, Ohio, were completely destroyed by fire on the 15th inst. The flames spread so rapidly that nothing could be done toward checking their progress. The loss is \$15,000, and is well covered by insurance.

The partnership existing between H. W. Beegle and T. F. Callahan, under the style of the American Knife and Razor Company, St. Louis, Mo., has been dissolved by mutual consent. T. F. Callahan retires and H. W. Beegle continues under the same name. Mr. Beegle informs us that he has perfected arrangements whereby the business will be largely extended during the year.

At the annual meeting of the Wilcox & Howe Company, Birmingham, Conn., it was shown that the business was in a very prosperous condition; and notwithstanding the drawbacks caused by the breaking of the dam, shutting the factory down for six weeks in their busiest season, and five months' dull business in the latter half of the year, they overcame all losses and showed a small gain on the year's business. The company recently received an unexpected and unsolicited testimonial from the Eagle Bicycle Mfg. Company of Torrington, Conn., for whom they have been making bicycle forgings. The Bicycle Company express themselves as exceedingly well pleased with the work done for them; both for the prompt manner in which it was executed and excellent quality of forgings.

Eastman & Krauss Razor Company, Stapleton, S. I., and 98 Chambers street, New York, in a circular, January 15, notify the trade that owing to the increase in their business during the past six months they have prepared themselves for a larger demand in 1892 than ever before. They are putting on the market a very complete line of goods, including razors of all kinds, with American hand-forged blades, razor strops, pocket cutlery, shears, scissors, &c. The excellent quality of these goods is emphasized and attention called to the company's superior facilities for manufacturing.

The Keating Wheel Company have removed from Westfield, Mass., to Holyoke, Mass., where they occupy a new building 60 x 223, four floors and built of brick. This is equipped with the best machinery obtainable for the manufacture of bicycles. Their wheels are the Model A, Model B and Ladies', all safeties, which they claim are the lightest machines made.

The Hartman Mfg. Company of Beaver Falls, Pa., manufacturers of wire mats and wire fencing, have decided to erect a branch works at Hamilton, Ont. These works will be operated for the manufacture of the same class of wire goods as is now made by the firm at Beaver Falls, and the goods will be manufactured under patents granted by the Canadian Government. The establishment of this branch at Hamilton, Ont., has given rise to the report that the Hartman Mfg. Company intend removing their entire establishment from Beaver Falls to that place. This is incorrect, as the firm will only erect a branch works there, as given above.

At the annual meeting of the Bucher & Gibbs Plow Company, Canton, Ohio, January 4, the following officers were elected: John R. Bucher, president; F. E. Myers, vice-president; H. A. Cavanaugh, general manager; W. J. Poyser, secretary; F. B. Niesz, treasurer; G. W. Beam, mechanical superintendent, and F. E. Myers, superintendent general agencies. The Board of Directors comprises the following gentlemen: J. R. Bucher, F. E. Myers, F. B. Niesz, H. A. Cavanaugh, J. R. Poyser, P. A. Myers and W. J. Poyser. The majority of these officers have been identified with the company for many years, and have helped to promote and perpetuate their successful operations. With the corps of efficient general agents, the many distributing houses in the large centers of trade and largely increased

manufacturing facilities, the company are prepared to continue to serve the wants of their customers with satisfaction to the latter and credit to themselves.

A company has been organized at New Britain, Conn., to manufacture the invisible pin casket handle, of which Fred. H. Arnold and James R. Fletcher are the patentees. The capital stock of the company is \$10,000, and while the manufacture of the above article will be the principal object, they will also manufacture casket hardware and hardware specialties.

#### Miscellaneous.

At the annual meeting of the New Process Welding and Spinning Company, held on the 5th inst. at the office of the company, 21 Rialto Building, Chicago, the following officers were elected for the ensuing year: Geo. D. Cook, president; Mortimer McRoberts, vice-president; W. L. Trowbridge, secretary.

Among recently authorized corporations in Illinois are the following: The Columbian Cycle Company; to manufacture cycles; capital stock, \$500,000; incorporators, James M. C. Tyner, George D. White, and Cyrus H. Lochard. Acme Machine Company, Moline; capital stock, \$10,000; incorporators, Stephen A. Walter, Edmund B. Atkinson, Conrad F. Gantz and Rufus A. Smith.

The extensive fuel gas plant designed by the S. R. Smythe Company, engineers and contractors, Lewis Block, Pittsburgh, Pa., for the Howard Plate Glass Company, Cochran Station, Pa., has been completed in a portion of the factory, and the results have been so satisfactory that the S. R. Smythe Company have received orders to connect it and apply "coal gas" to every furnace and kiln in the factory. The fuel gas plant will be temporarily closed down while the additions are being made, it being necessary to do this.

The Valley Mining, Shipping and Mfg. Company of Kittanning, Pa., with a capital stock of \$50,000, have applied for a charter. The incorporators are Judge Rayburn, I. N. Boarts, Harry Gault, T. H. Logan and D. M. Nolder. The mines of the company are located at Mahoning, Allegheny Valley Railroad, and the work on the incline and tippie is being pushed forward rapidly.

M. V. Smith, engineer and contractor, Hamilton Building, Pittsburgh, Pa., has introduced his gas producers into the works of the Pittsburgh Plate Glass Company, and is now erecting producers in the new plant of the Huntingdon Glass Company, who are about ready to go into operation at Huntingdon, W. Va.

Thomas H. Stryker and other trustees of the New York Locomotive Work of Rome, N. Y., have petitioned the Supreme Court for a voluntary dissolution of that corporation. The company started business in 1881, and up to 1890 employed about 800 men, the number since that time dwindling down to 100. Work has been dull for the past few years, and money has been lost on a number of contracts. In July, 1891, the stock of the company was increased \$100,000, and a resolution was passed recommending the placing of an additional mortgage of \$100,000 on the property to secure bonds to that amount to be issued. The company were unable to obtain subscriptions to any considerable amount, and the creditors were asked to extend the time on notes and obligations then maturing. The petition states that the business of the company has become so reduced that the petitioners have discovered that the stock, effects and other property are not sufficient to enable said corporation to pay their debts as they mature, or at all in full, but that if the plant, which is a valuable one, were sold at a forced sale there would be a great sacrifice of value, and very little would be realized therefrom. The petition further states that the said corporation have no cash assets nor other available property that can be turned into cash sufficient to meet their debts, and prays for a final order dissolving the corporation, and that all their rights, privileges and franchises be forfeited. The incumbrances on property are: July 7, 1883, first mortgage, given to the Central Trust Company of New York for \$150,000, due February 1, 1893, with interest unpaid from February 1, 1891; first consolidated mortgage, given to Atlantic Trust Company of New York, November 26, 1890, due November 26, 1903, for \$300,000, to secure 600 bonds. Of these bonds \$150,000 are to be held to take up and retire the first mortgage. Of the remaining 300 bonds, only 96, amounting to \$48,000, have been issued and are outstanding. The other \$102,000 of bonds are pledged as collateral.

The Architectural Iron Workers of America, assembled in convention at St. Louis, Mo., have declared in favor of an eight-hour day.

The works of the Waterbury Brass Company, at Waterbury, Conn., have been destroyed by fire at a loss of \$250,000; insured for \$187,000.



# TRADE REPORT.

The event of the week has been the large sales of Lake Superior Bessemer Ores for delivery during the season of 1892. The sales have come earlier than usual during the past years, and are chiefly interesting as showing that the large steel works have been eager to cover their raw material, and that the Lake Ore producers have been satisfied to meet them at a moderate advance in the price. The two great interests, the Illinois Steel Company and the Carnegie Associations, have practically covered the greater part of their requirements, the principal sellers having been the Minnesota Iron Company, the Chandler and the Norrie mines. The total purchases foot up to about 3,000,000 tons, as will be observed from our Chicago and Cleveland dispatches. Except in those cases where the steel works have freight contracts covering a series of years, the advance to the consumers of the Ore has ranged between 35¢ and 50¢ per ton, of which the vesselmen get 15¢ to 25¢ a ton. In other words, as compared with last year, the cost of making the finished product will be from 75¢ to \$1 greater than it was last year. Of course until the season of navigation has opened the furnaces are running on the cheaper Ore, but, on the other hand, it must be remembered that the majority of furnacemen and Steel makers have sold heavily for delivery during the next three months at very low prices, based on cheap raw material. It may be argued that the advance in Bessemer Pig and in Billets in the Western market has already discounted the expected advance in Ore. But it should not be forgotten that the lowest prices made, say \$15 for Pig and \$23.50 for Billets, were unduly low, even with very cheap raw material. After all, the Rail trade must be the key to the situation this year. If the demand comes up to 1,800,000 gross tons, which conservative authorities estimate, then Bessemer Pig and Soft Steel, with all its products, must reach a higher level.

So far as the East is concerned, the smaller buyers in Eastern Pennsylvania have taken about 100,000 tons of foreign Ore, which costs them about 7¢ a unit, ex-ship, and which competes successfully with Lake Ore.

In Foundry and Forge Irons the situation throughout the country, as revealed by our market reports, is practically unchanged. There is little weakness at any point.

It is in Finished Iron and Steel that the market remains in a very unsatisfactory condition. Our Chicago report gives details of the placing of a contract for elevated railroad work in that city, and similar work for a mile of structure in Baltimore has been captured by an Eastern mill at a price which is spoken of as the lowest on record. Plates are very low, but there has been some business for shipbuilding on the coast, with more to come

at an early date. It is believed, too, that the lake yards will have a busy year. The Beam makers have put at rest all rumors of a possible disruption.

## Philadelphia.

Office of *The Iron Age*, 220 South Fourth St., PHILADELPHIA, Pa., January 19, 1892.

The second week of the new year has been a severe disappointment to those who were looking for improvement in the Iron trade. The volume of business has been fairly large, but prices are unsettled, and no such indications of firmness are met with as were shown two or three weeks ago. About all that sellers seem to expect is to hold prices where they are until the demand improves, which some people think may be not until the spring or early summer months. Of course there may be a sudden change for the better when least expected, but the feeling gains ground that nothing beyond a mere hand-to-mouth business will be done until later on in the season, and in the meanwhile weak and irregular prices are likely to be the rule rather than the exception.

**Pig Iron.**—In this department there is at least a fair degree of steadiness in prices. Sellers complain that the market is dull, but the fact that everything goes at former quotations proves that things are no worse than they have been for several months past. This is hardly in line with the general market, but so far as regards this section of the country, it is a fact, nevertheless. Whether it is that Pittsburgh is unloading finished material in Eastern markets regardless of cost, or whether it is due to some other cause, does not appear, but it is undoubtedly the fact that both finished Iron and Steel have been sagging continuously, while Pig Iron has gained strength, rather than lost it. At the same time, there is not much room for enthusiasm even in regard to Pig Iron. All that can be fairly said is that it holds its own, and stubbornly refuses to sell for less money than during the fall months. This is usually a good indication of an advance, but the trade are incredulous on that point, and will doubtless remain so until the logic of events forces them to a different conclusion. Another view of the position might be that the declining tendency of finished material must eventually influence the crude article, but as a matter of fact it has not had that effect so far, and while it is impossible to say what the ultimate result will be, the immediate appearances do not favor the idea of lower prices for Pig metal. At this point comes in the almost unanswerable question of what are the prices of Pig Iron? If that question could be put in a definite shape it might be answered just as definitely, as, for instance, What brand, and what delivery? But when it is simply No. 2 Foundry, or a Gray Forge, half a dozen different prices might be quoted, any or all of which might be correct, according to brand or point of delivery. During the past week sales have been made at prices about as follows, the inside figures for points South or West, such as Baltimore or Harrisburg, medium and outside rates for seaboard or near-by deliveries:

Ohio Softeners, No. 1x.....	\$18.00	Ⓐ \$18.50
Ohio Softeners, No. 2x.....	17.00	Ⓐ 17.50
Standard Penna., No. 1x.....	17.50	Ⓐ 18.00
Standard Penna., No. 2x.....	16.00	Ⓐ 16.50
Medium Penna., No. 1x.....	17.00	Ⓐ 17.25
Medium Penna., No. 2x.....	15.75	Ⓐ 16.00
No. 2 Southern.....	14.50	Ⓐ 15.00
No. 3 Southern.....	13.50	Ⓐ 14.00
Virginia, No. 1x.....	16.00	Ⓐ 17.00
Virginia, No. 2x.....	15.00	Ⓐ 15.75
Standard Neutral All-Ore Forge.....	14.25	Ⓐ 15.00
Ordinary Forge Cinder mixed.....	13.50	Ⓐ 14.00
Hot-Blast Charcoal.....	20.00	Ⓐ 22.00
Cold-Blast Charcoal.....	24.00	Ⓐ 27.00

### Bessemer and Low-Phosphorus Iron.

—Some little business has been done on the basis of \$16.50 @ \$17 at furnace for the former, and \$18.50 @ \$19 for the lat-

ter. There are additional inquiries in the market, but nothing to indicate any important business in the immediate future.

**Steel Slabs and Billets.**—Market dull, but in the absence of new business it is hard to say what the exact position is as regards prices. Mills are anxious for immediate specifications, and on orders of that kind low prices would be named, but for March and later there is nothing to show that there is any change from figures recently quoted, say \$27 @ \$27.50 at seaboard or Schuylkill Valley, or \$26.50 @ \$27 for points on the Susquehanna. For January or February it is not unlikely that 50¢, or perhaps 75¢, less would be accepted, but in the absence of firm offers it is hard to say what makers would do, although they admit that they want immediate specifications badly, and for such would make liberal terms.

**Steel Rails.**—The usual demand for small lots appears to comprise the bulk of the business at Eastern mills, but in the West it is said that larger orders are being placed. There is not the demand that was expected, however, although manufacturers are still confident in regard to the ultimate outcome. Meanwhile prices are steady at \$30 at mills for standard sections, and \$31 @ \$31.50 for 30's to 40's.

**Muck Bars.**—No demand of any importance, and therefore no definite quotations. Some holders have been asking for bids at as low as \$25.25 @ \$25.50 at mills, while others quote a full dollar more, but prices appear to be a matter of utter indifference, as the article is not wanted at present.

**Bar Iron.**—A fair demand is reported for small lots, but the feeling is one of great disappointment, as a very considerable demand was expected before this time. Consumption is evidently not increasing in this vicinity, and while a better tone is reported in the West, there is nothing of the kind to be said of the Eastern markets. The large orders recently given out for cars were chiefly taken in the West, and this may perhaps explain the meager demand for that class of Iron in this vicinity. There is rather more inquiry to-day, however, although prices are at the very lowest point, and for the present without any prospect of improvement. The best makes are quoted at 1.75¢ in the city or 1.70¢ at interior points, but there is plenty of good Iron at about a half-tenth less money.

**Plates.**—Some business is doing all the time, and in general work consumption is very fair, but in ship and bridge building the demand is disappointing. In the first mentioned, a great deal of business is under consideration, and for that matter has been for several weeks past, but, so far as known, no definite progress has been made, and things are virtually about as they were a month or six weeks ago. The business will have to be placed sooner or later, but the mills are getting tired of waiting, and therefore bid extremely low figures on anything that promises something definite and for immediate specifications. Tank and Boiler Plate has been in good demand, but prices are lower than ever, and for the present without any indication of improvement. In ordinary cases prices are about as follows, but still lower figures have been accepted on what were considered desirable orders:

	Iron.	Steel.
Tank Plates.....	1.85 @ 1.90¢	1.85 @ 1.95¢
Refined.....	2.20 @ 2.30¢	2.00 @ 2.10¢
Shell.....	2.30 @ 2.40¢	2.20 @ 2.30¢
Flange.....	3.20 @ 3.30¢	2.40 @ 2.60¢
Fire-Box.....	4.00 @ 4.25¢	2.80 @ 3.00¢

**Structural Material.**—There is a little more inquiry, and some people are inclined to think that a better demand is at hand, but in the meanwhile several mills are getting short of orders and therefore compete very closely for any new business that may

be offered. A few small orders have been given out, including the Fidelity Building in Baltimore, but the aggregate is not more than about a full week's work, so that there is no actual gain of work in hand. Prices are irregular, but in most cases are quoted about as follows: Angles, 1.90¢ @ 2¢; Universal Plates, 2¢ @ 2.10¢; Sheared Plates, 1.90¢ @ 2¢, and in some cases lower prices, to about 1/10¢ more, for Steel, according to requirements. Tees, 2.5¢ @ 2.6¢; Beams and Channels, 3.1¢ for either Iron or Steel.

**Sheet Iron.**—The market is very dull, but prices are steady and for best makes quotations are about as follows:

Best Refined, Nos. 14 to 20.....3.00¢ @ 3.05¢  
Best Refined, Nos. 21 to 24.....@ 3.10¢  
Best Refined, Nos. 25 to 26.....3.20¢ @ 3.25¢  
Best Refined, No. 27.....3.40¢ @ .....  
Best Refined, No. 28.....3.50¢ @ .....  
Common, 1/2¢ less than the above.

Quotations given as follows are for the best Open-Hearth Steel, ordinary Bessemer being about 1/4¢ lower than are here named:

Best Soft Steel, Nos. 14 to 20 .....3¢ @ 3 1/2¢  
Best Soft Steel, Nos. 21 to 24.....3 1/2¢ @ .....  
Best Soft Steel, Nos. 25 to 26.....3 3/4¢ @ .....  
Best Soft Steel, Nos. 27 to 28.....4¢ @ .....  
Best Bloom Sheets, 1/2¢ extra over the above prices.

Best Bloom, Galvanized, discount.... @ 67 1/2 %  
Common, discount..... @ 70 %

**Scrap Iron.**—Market dull, and in some cases is reported to be very weak, although Steel is still in demand at full quoted rates. General quotations are about as follows: Iron Rails, \$21.50 @ \$22 asked; Steel Rails, \$16.50 @ \$17.50, delivered; No. 1 Railroad Scrap, \$19.50 @ \$20, Philadelphia, or for deliveries at mills in the interior \$20 @ \$21, according to distance and quality; \$14.50 @ \$15.50 for No. 2 Light; \$14 @ \$14.50 for best Machinery Scrap; \$13.50 @ \$14 for ordinary; \$14.50 @ \$15.50 for Wrought Turnings; \$10 @ \$10.50 for Cast Borings, and nominally \$23 @ \$25 for Old Fish Plates, and \$16 @ \$16.50, delivered, for Old Car Wheels.

**Wrought-Iron Pipe.**—The demand is a little more active, but there is no improvement in prices, discounts being from 5 % to 10 % more than those nominally quoted, viz.:

Butt-Welded Black.....57 1/2 %  
Butt-Welded Galvanized.....47 1/2 %  
Lap-Welded Black.....67 1/2 %  
Lap-Welded Galvanized.....55 %  
Boiler Tubes, 2 1/2 inch and under.....52 1/2 %  
Boiler Tubes, 3 to 6 inch.....60 %  
Boiler Tubes, 7 inch and larger.....55 %

## Chicago.

(By Telegraph.)

Office of The Iron Age, 50 Dearborn street, }  
CHICAGO, January 19, 1892.

About 3,000,000 tons Bessemer Ore have been sold for this year's delivery. The market is very active and the best classes of Ore are being picked up rapidly by the Steel manufacturers. The cost to consumers is about 50¢ per ton on an average over last year, of which 15¢ to 25¢ is absorbed by vesselmen. Most of the Ore sold has already been placed under contract with vessel owners. Very little if any non-Bessemer Ores have been sold as yet. The big Steel companies have covered their requirements for the season.

The South Side Elevated has placed a contract with the Keystone Bridge Company for 2600 feet at 3.38¢, erected, to complete their structure from the heart of the city to Fortieth street. They will have trains running by May 1. Right of way now being secured from Fortieth street to Sixty-third street, thence to

Jackson Park, after which contracts will be let for that work, to be completed by the opening of the World's Fair.

The very stormy and exceedingly severe weather of the past week has had quite an effect on some classes of trade, causing quietness to rule where decided activity had been expected with good reason. Nevertheless, the tendency of the market seems to be strongly in the direction of improvement, as the lowest sellers are gradually withdrawing from the contest for business.

**Pig Iron.**—The same condition of activity in Coke Irons continues to be reported. Contracts under negotiation for the past week or ten days have been concluded, and plenty of business is still pending. A strong effort has been made by consumers and sellers of Southern brands to get together, but the makers of local Iron have been successful in most cases in capturing large orders because they were willing to make long deliveries, while the Southern companies would not go beyond three or four months. Prices have been kept down to their lowest point by the circumstances now prevailing, but an early change in this respect seems to be imminent, as an advance of 20¢ on Coke is talked of for February 1 by Coke sellers. The Iron Ore market is active at an advance of 50¢ over last season for Bessemer. Such contracts as have been placed for non-Bessemer range from 30¢ to 50¢ higher, but so far not much has been done in these Ores. Dearer Pig Iron is, however, very certain. Lake Superior Charcoal is looking better. Considerable activity has taken place in a small way, say in 50 to 500 ton lots, and a stronger tone prevails. Quotations are as follows:

Lake Superior Charcoal.....	\$17.00 @ \$17.50
Local Coke Foundry, No. 1.....	15.00 @ 16.00
Local Coke Foundry, No. 2.....	14.50 @ 15.00
Local Coke Foundry, No. 3.....	14.00 @ 14.50
Local Scotch.....	16.00 @ 16.50
Ohio Strong Softeners.....	17.75 @ 18.25
Southern Coke, No. 1.....	15.75 @ 16.00
Southern Coke, No. 2.....	14.75 @ 15.00
Southern Coke, No. 3.....	14.00 @ 14.25
Southern, No. 1, Soft.....	14.75 @ 15.00
Southern, No. 2, Soft.....	14.00 @ 14.25
Southern Gray Forge.....	13.75 @ 14.00
Southern Mottled.....	13.25 @ 13.50
Tennessee Charcoal, No. 1.....	17.50 @ 18.00
Alabama Car Wheel.....	19.50 @ 20.50
Coke Bessemer.....	16.50 @ 17.00
Hocking Valley, No. 1.....	17.25 @ 18.50
Jackson County Silvery.....	17.50 @ 18.00

**Spiegeleisen.**—Demand for Spiegel is confined to carloads, but time is about at hand for larger orders to be entered.

**Finished Iron.**—Orders for cars are becoming more frequent, and the Bar-Iron trade should soon show an improvement. Manufacturers quote mill lots 1.65¢ @ 1.70¢, half extras, Chicago, according to the character of the order. Large contracts are pending for structural material, but in a general way this branch of trade has been quiet. Sheets are dull at 2.90¢ for No. 27 Common in carload lots. Galvanized Iron continues remarkably active in view of the long-continued heavy demand, but prices are unchanged. Plates are still depressed and too little doing to determine prices. Merchant Steel is quiet, but not more than usual for the season.

An unfortunate typographical error last week made the quotation for Bar Iron 1.55¢, Chicago. The error was so great that it should have carried with it its own correction. The figures meant were, of course, 1.65¢.

**Track Supplies.**—Business in Steel Rails was fair for the past week, but no large orders are reported to have been taken. It is likely that the railroads which have not yet covered their requirements for the year will soon regret it. Prices are now quoted at \$32 and upward, according to the character of the order. Splice Bars are still quoted at 1.80¢ for Iron or Steel, but show an upward tendency. Fastenings are unchanged.

**Old Rails and Wheels.**—Old Iron Rails have shown further strength. Consumers are apparently not so well supplied as they thought they were. Quite a number of sales are reported, among them being one of 1500 tons. They are quoted at \$22.25 @ \$23.50. Old Steel Rails are nominally worth \$14.50, as they run. Old Car Wheels have been rather quiet of late, and are quoted all the way from \$15.75 for large lots to \$16.50 for carloads.

**Scrap.**—The demand noted last week proved to have been from the dealers, as was feared, and the market has relapsed into its former dullness. The local consumption of Scrap is now very small, and if the idle mills do not soon start there will be an earnest effort to unload accumulated stock on distant markets. An inquiry for a large lot of Heavy Steel Scrap is noted for March and April delivery. Quotations are as follows, per net ton: No. 1 Railroad, \$18.50; No. 1 Forge, \$17.50; Horse Shoes, \$18; Car Axles, \$22; Fish Plates, \$20; No. 1 Mill, \$12.50; Pipes, \$11.50; Sheet Iron, \$8; Cast Borings, \$7; Wrought Turnings, \$10; Axle Turnings, \$12; Machinery Cast, \$12; Malleable Cast, \$9; Stove Plate, \$9; Mixed Steel, per gross ton, \$11.75; Coil Steel, \$15.50; Leaf Steel, \$17.75.

**Metals.**—Everything is quieter and weaker. Lake Copper, carload lots, is now worth but 11 1/2¢ and Western 10 1/2¢, while Spelter can be bought at a shade under 4.50¢. Trade in Pig Lead has been quiet and sales will not amount to over 200 tons at 4¢. Stocks are small.

Forster, Backman & Hawes will be the style of a new Pig-Iron firm to commence business in Chicago on February 1. Their office will be in Suite 638, Rookery Building. The members of the firm are Charles F. Forster, W. W. Backman and Albert C. Hawes. Mr. Forster is secretary and manager of the Iroquois Furnace Company, and Messrs. Backman and Hawes are Pig-Iron salesmen of long experience and wide acquaintance in the Chicago market. They have secured a license to incorporate, with a capital stock of \$100,000. The firm will have the exclusive sales agency for the output of the Iroquois Furnace, and will also handle Southern Pig Iron and the high-silicon Pig Irons controlled by Chamberlain, Turney & Co.

Cramer & Burt, Room 616, Phenix Building, Chicago, have been appointed sales agents for the Woodward Iron Company of Alabama. They report encouraging results in their efforts to introduce Texas Charcoal Pig Iron among Northern Car-Wheel manufacturers.

## Louisville.

LOUISVILLE, KY., January 18, 1892.

Very low prices in Coke Irons have continued during the week, Gray Forge basis \$9.50 and No. 1 Foundry as low as \$11.50 being made for prompt shipment, also sales at \$9.75 Gray Forge, deliverable during six months. Prices mentioned are not confined to the smaller furnaces, but one of the largest companies is reported to have sold on this basis. Buyers East are making inquiries for large lots, but are not willing to pay, save for long deliveries, more than \$9.75 for Gray Forge at furnace, and have tried to shade this price, but without success. Car-Wheel Irons continue quiet, prices remaining stationary—first-class Car-Wheel Irons being offered on basis of \$15 for Nos. 1 and 2, and \$16 for Nos. 3 and 4. We quote for cash, cars, Louisville:

Southern Coke, No. 1 Foundry...	\$14.25 @ \$14.75
Southern Coke, No. 2 Foundry...	13.50 @ 13.75
Southern Coke, No. 3 Foundry...	12.75 @ 13.25
Southern Coke, Gray Forge.....	12.50 @ 13.00
Southern Charcoal, No. 1 Foundry...	15.75 @ 16.75
Southern Car Wheel.....	17.75 @ 19.75



## Pittsburgh.

Office of *The Iron Age*, Hamilton Building, }  
PITTSBURGH, January 19, 1892. }

**Pig Iron.**—Business has been less active the past week, but prices are holding steady. The fact should not be overlooked that our furnacemen are sold ahead. While the market is not quite as active as it was a couple of weeks ago, it is holding steady, and the feeling generally obtains that when there is another charge it will be upward. Prices may be fairly quoted as follows:

Neutral Gray Forge....	\$13.50 @ \$13.75, cash.
White and Mottled.....	12.75 @ 13.25, "
All-Ore Mill.....	14.00 @ 14.50, "
No. 1 Foundry.....	15.50 @ 15.75, "
No. 2 Foundry.....	14.50 @ 14.75, "
No. 3 Foundry.....	14.10 @ 14.25, "
Charcoal Foundry.....	20.00 @ 21.50, "
Cold-Blast Charcoal.....	25.00 @ 27.00, "
Bessemer Iron.....	15.75 @ 16.00, "

Standard brands of Forge Iron are steady at \$13.50, cash, several lots having been reported at that price. The most notable sale reported was a lot of 5000 tons Bessemer at \$16, cash.

**Muck Bars.**—The dullness which has prevailed for some time past continues. They are being offered freely for almost any delivery within the next three months at \$26, cash, and it is intimated that they can be bought for less.

**Ferromanganese.**—There is a fair demand for domestic 80 %, with sales at \$63 @ \$63.50, cash.

**Manufactured Iron.**—There is an improved demand reported. Orders have been coming forward more freely the past week, and prices are steady as quoted. It may be well to state our quotations for best makes of city iron. Old Rail Iron can be bought considerably below the prices quoted, but many jobbers and large consumers are willing to pay the difference for a No. 1 article. We quote No. 1 city-made Bars at 1.70¢ @ 1.72½¢; Plate and Tank, 2¢ @ 2.10¢; No. 24 Sheet at 2.60¢; all 60 days, 2 % off for cash. Skelp Iron continues dull, but an improved demand is looked for soon. Grooved is quoted at 1.60¢ @ 1.65¢ and Sheared at 1.85¢ @ 1.90¢, four months, 2 % off for cash.

**Nails.**—There is no change to report in the general position of the Cut Nail trade. Business continues rather quiet and prices show no improvement. We continue to quote at \$1.55 @ \$1.60 for 30 to 35 average, f.o.b. at factory in the Wheeling district, 60 days, 2 % off for cash. There is more inquiry for Wire Nails and we have to report a considerably firmer market; there are now no sellers here below \$1.70, f.o.b. at factory, and then only for near-by delivery. Not only is \$1.70 the price quoted by manufacturers, but brokers say they do not know where they would be able to buy below \$1.70. Buyers appear to have been impressed with the belief that hard pan has been reached.

**Wrought-Iron Pipe.**—There are some good-sized orders floating around, the very low prices having attracted the attention of large buyers, some of whom are anxious to contract for future delivery; we hear of one order having been received here from a hardware firm for ten carloads, and a broker here says he would not hesitate to contract for 500 carloads at present prices if he could get the deliveries he wanted.

**Merchant Steel.**—There is a continued fair demand at the following prices: Crucible Tool Steel, 6¢ @ 7¢; Bessemer Machinery, 2¢ @ 2.10¢; Toe Calk, 2.30¢ @ 2.50¢; do. Spring, 2.40¢ @ 2.50¢; Plow, 2.05¢ @ 2.10¢; Steel Bars, 1.70¢ @ 1.80¢, all f.o.b. at mill, 2 % off on desirable orders.

**Old Rails.**—The dullness noted for some time past continues, but prices remain about as last quoted: Iron Rails, \$22.75 @ \$23; Steel Rails, \$17 @ \$18 for short and

long pieces. Even out in the valley districts there are but few buyers at present.

**Wire Rods.**—There have been no sales reported here for a considerable time, but now that a better trade in Barb Wire and Wire Nails is reported, it is reasonable to look for an improved demand.

**Structural Material.**—Business continues quiet, as it usually is this month, but February and March will, no doubt, show a marked improvement in the demand. Prices remain unchanged, as follows: Beam and Channels, 3.10¢; Tees, 2.25¢ @ 2.40¢; Angles, 1.85¢ @ 2¢; Universal Mill Plate Irons, 1.90¢ @ 2¢; Steel Sheared Bridge Plates, 1.85¢ @ 2¢; Refined Bars, 1.75¢ @ 1.80¢.

**Steel Plates.**—There is a fair business, which promises to be increased soon; it is expected that a good many new lake vessels will be built this year in this line. Prices remain unchanged. Fire Box, 3½¢ @ 4½¢; Tank, 1.90¢ @ 2¢; Shell, 2.10¢ @ 2.15¢; Flange, 2.35 @ 2.50¢.

**Barb Wire.**—There has been increased activity the past week, and, while prices remain unchanged, the feeling is stronger. We continue to quote Painted at \$2.45 and Galvanized at \$2.95, f.o.b. at factory in this district. It is reported on pretty good authority that those firms outside of the syndicate have agreed to stand by the syndicate prices. Some good sized contracts are reported as having been placed recently.

**Steel Billets and Slabs.**—There has been less business reported the past week, but this was to be expected in view of the large business the two weeks preceding. Manufacturers both here and at Wheeling continue to quote at \$25, cash, f.o.b. at their mill. There was a sale of Slabs reported at \$25.25, delivered, which was equal to \$25 at maker's mill. Some of the brokers intimate that Billets can be bought below price quoted.

**Steel Rails.**—Are reported firm at \$30, cash, at mill for heavy sections. There is a fair business, which promises to increase later on in the season.

**Railway Track Supplies.**—There is nothing new to note; business continues fairly active, while prices remain unchanged. Spikes, 2.15¢, f. o. b. at makers' works, 30 days; Splice Bars, 1.70¢ @ 1.80¢; Track Bolts, 2.65¢ and 2.75¢ with Square and Hexagon Nuts.

**Old Material.**—Sales of No. 1 Railroad Wrought Scrap at \$19 ⅓ net ton. Sale of a small lot of Hammered Axles at \$25.50, net ton. Sales of Steel Blooms and Rail Ends at \$17.50 @ \$18, gross; Cast Iron Scrap, \$13.

**Connellsville Coke.**—Furnace Coke, \$1.90; Foundry do., \$2.30; Crushed do., \$2.65, all per net ton, f.o.b. cars at ovens.

(By Telegraph.)

Sales of 3000 tons Bessemer Iron reported at \$15.60, 1000 tons delivered in January, February and March. The Wire Nail market is firm, quotations now given at \$1.70. An attempt to place an order for 10,000 kegs, four months, delivered, at a price less than \$1.70, 2 % off for cash in ten days, in mills outside of Pittsburgh district, has been unsuccessful. It is reported that the interests of the Belmont Nail Company, Kenwood Iron Works and Wheeling Iron and Nail Company, who are joint owners of the Wheeling Steel Works, at Wheeling, W. Va., will be consolidated after the meeting of the stockholders of these concerns is held next week. The new

concern, if organized, will be the strongest and largest Nail manufacturing concern in the Ohio Valley.

## Detroit.

**WILLIAM F. JARVIS & Co.**, under date of January 18, 1892, report as follows: Business has been a little less active this week than during the previous one, notwithstanding the railroads continue purchasing cars and the car makers' to immediately cover for all contracts taken by ordering the material needed for their manufacture, including the Pig Iron. Some orders for Lake Superior Charcoal are in prospect, but prices continue weak and no immediate change for the better is anticipated. The smaller buyers are still purchasing only as required for immediate use, and the larger ones have orders already placed for next six months. There has been less call for Southern Irons, except for a few special grades, and Ohio Irons have also been very quiet. The consumption is large and prospects for increased business are good, but prices continue about the same. Should the advance come suddenly, a great many buyers who are waiting for the turn and relying on their being able to then get in their orders at bottom figures would be greatly disappointed. With a quiet market and prices unchanged, we quote as follows:

Lake Superior Charcoal, all numbers.....	\$17.00 @ \$18.00
Lake Superior Coke, Bessemer.....	16.50 @ 17.00
Lake Superior Coke Foundry, all ore.....	17.50 @ 18.00
Ohio Blackband (40 per cent.)....	18.10 @ 18.50
Southern No. 1.....	16.25 @ 16.50
Southern Gray Forge.....	14.00 @ 14.50
Jackson County (Ohio) Silvery.....	18.25 @ 18.75

## Cincinnati.

(By Telegraph.)

Office of *The Iron Age*, Fourth and Main Sts., }  
CINCINNATI, January 19, 1892. }

**Pig Iron.**—There has been no large trading during the week, but a satisfactory volume of orders for current consumption, which in the aggregate approach 30,000 tons, are reported, and these embrace all varieties and grades of iron. Charcoal Iron has sold to a more liberal extent than usual, both for standard and the lower Southern grades, and Hanging Rock Charcoal Iron has also sold to an enlarged degree. For all of these Irons, the largest sales of which in any one lot were 1000 tons, pretty full quotations were realized. Gray Forge has sold to a fair extent at \$9.50, at the furnace, and 5000 tons of Mottled Iron sold at \$9, but this Iron is scarce and it is held for higher rates. We hear of some small lots of iron in second hands that are offered at a reduction to close out, but as a rule the furnaces seem to be working into better shape, and while willing to supply the current demand at previous prices, are not urgently offering to sell. Some of the low prices which have been reported, when closely investigated, prove to have had such conditions attached that the base sale gives an erroneous impression of the market. There is still some difficulty in making prompt deliveries from certain furnaces to certain localities, but there is no great difficulty on this score, and there are on the other hand fewer applications to have deliveries postponed. Collections are generally very promptly made. Quotations are unchanged, as follows:

<b>Foundry.</b>	
Southern Coke, No. 1.....	\$14.75 @ \$15.00
Southern Coke, No. 2.....	13.75 @ 14.00
Southern Coke, No. 3.....	12.75 @ 13.00
Ohio Soft Stone Coal, No. 1.....	16.25 @ 16.50
Ohio Soft Stone Coal, No. 2.....	15.50 @ 16.00
Mahoning and Shenango Valley.....	17.00 @ 17.50
Hanging Rock Charcoal, No. 1.....	20.00 @ 21.00
Hanging Rock Charcoal, No. 2.....	19.00 @ 20.00
Tennessee and Alabama Charcoal, No. 1.....	16.50 @ 17.00
Tennessee and Alabama Charcoal, No. 2.....	15.50 @ 16.00

	Forge.	
Gray Forge .....	12.25 @	12.50
Mottled Neutral Coke.....	12.00 @	12.25
<i>Car Wheel and Malleable Irons.</i>		
Standard Southern Car Wheel.....	19.75 @	20.00
Lake Superior Car Wheel and Malleable.....	18.75 @	19.00

## New York.

Office of *The Iron Age*, 96-102 Reade street, New York, January 20, 1891.

**American Pig.**—Sellers report a somewhat improved inquiry and regard the situation as somewhat better than it has been. Among others, the Thomas Iron Company note a greater interest on the part of their regular customers. The report that an advance of \$1 per ton had been decided upon is untrue. On the contrary, if any change in the price should be made, present indications point rather in the other direction. We quote Northern brands, \$16.75 @ \$18 for No. 1; \$16 @ \$16.50 for No. 2, and \$14 @ \$14.50 for Gray Forge. Southern Iron sells at \$15.75 @ \$17 for No. 1; \$15.25 @ \$16 for No. 2 and \$13.75 @ \$14.25 for Gray Forge.

**Spiegeleisen and Ferromanganese.**—There has been no business in Spiegeleisen, which remains nominally at \$23 @ \$23.50 for 10 to 12 %, and \$26.75 @ \$27 for 20 %. Importers of Ferromanganese have just been advised of an advance of 5/8 per ton by foreign makers, but since they could not get into the Western market, and since there has been very little doing in the East, the advance causes little interest, unless it is followed by the American makers. Scarcity of Ore and the fact that the supply of Caucasian Ore is pretty well controlled is given as the reason importers continue to quote \$62.50 @ \$63, which may, however, be soon withdrawn.

**Billets and Rods.**—Sellers in this district report very little new business. An interesting transaction has been the purchase of about 2000 tons of special stock for a concern in this vicinity about to begin on Government work. Wire Rods are very dull, and the market seems in buyers' favor. The asking price is \$37, tidewater, but this figure would probably be very materially shaded.

**Manufactured Iron and Steel.**—Agents explain that specifications are coming forward very slowly. It is certain, however, that a good deal of work is coming out at an early date. The American Beam makers, after careful consideration of the situation, have decided that it will be better for all concerned to keep up the combination. A strong feeling has developed in favor of making lower prices rather than have unrestricted competition. It is reported that the Pacific Mail Company have placed one steamer, and that the 1200 tons of Plates and Shapes for it have been taken by a Pittsburgh mill. It is stated that two more will be closed within a week. Local buyers of Bar Iron have been in the market for the supply for the first half. An advance has been asked and will probably be conceded. We quote: Angles, 1.90¢ @ 2.10¢; Sheared Plates, 1.85¢ @ 2.25¢; Tees, 2.40¢ @ 2.75¢, and Beams and Channels, 3.1¢, on dock. Steel Plates are 1.9¢ @ 2.1¢ for Tank; 2.15¢ @ 2.30¢ for Shell; 2.40¢ @ 2.65¢ for Flange; 2.60¢ @ 2.75¢ for Marine, and 3¢ @ 3.25¢ for Fire Box, on dock. Bars are 1.7¢ @ 1.9¢, on dock. Scrap Axles are quotable at 2¢ @ 2.20¢, delivered. Steel Axles, 2¢ @ 2.2¢, and Links and Pins, 2.1¢ @ 2.20¢; Steel Hoops, 1.95¢ @ 2.05¢, delivered.

**Merchant Steel.**—We quote Hot-Rolled Shafting 1.95¢ @ 2.10¢; Machinery, 2.05¢ @ 2.15¢; Tire, 2.10¢ @ 2.25¢, and Toe Calk, 2.25¢ @ 2.35¢, delivered.

**Track Material.**—We quote Spikes, 2.10¢ @ 2.20¢; Angles, 1.70¢ @ 1.75¢ and Bolts, 2.65¢ @ 2.90¢, delivered.

**Steel Rails.**—Eastern mills report very little new business, and no sales of magnitude are reported. The Western mills are reported to be booking heavily, and the outlook is so encouraging that Eastern mills believe it possible that they will be able to sell in Western territory this year. It is regarded as likely that before May some buyers will find that the Western mills are so full of work for the busy months that they cannot take additional orders, even if they divert capacity from Billets. The official report of the Board of Control shows that shipments of Standard Rails, 50 lb and over, were 1,089,092 gross tons, so that with Light Rails the production was probably close up to 1,215,000 tons. This is the lowest since 1885, in spite of the fact that since then the mileage of the country has risen from 128,363 miles to 171,841 miles, and in spite of the fact that the average weight of Rails now put into the track is much heavier. The record since 1881 is appended:

Years.	Miles in operation.	New mileage.	Production Steel Rails. Gross tons.
1881.....	103,143	9,847	1,187,770
1882.....	114,712	11,569	1,284,067
1883.....	121,455	6,743	1,148,760
1884.....	125,379	3,924	996,983
1885.....	128,363	2,984	950,471
1886.....	136,400	8,037	1,574,703
1887.....	149,379	12,879	2,101,904
1888.....	156,394	6,925	1,386,278
1889.....	161,397	5,193	1,470,267
1890.....	167,741	6,344	1,797,489
1891.....	171,841	4,100	1,225,000

Rail makers argue from this array of figures that a good deal of renewal work has been held back and must come up this year. Developments in the money market are also decidedly encouraging. The M., K. and Texas issue, we learn, has been subscribed three times over. Money is accumulating rapidly at this financial center and a revival of railroad repairing and building is looked forward to this summer. The Chicago mills have advanced the price of Rails \$1 per ton. The East still quotes \$30 at mills.

D. B. McIlwaine, 111 Chambers street, has been appointed agent of the Crown Tube Company, makers of the well-known Mannesmann Tubes.

The Radford Pipe and Foundry Company of Cincinnati, whose works are at Anniston, Ala., and at Radford, Va., have opened an office at 128 Broadway. W. T. Partridge is in charge.

## Metal Market.

**Copper.**—During the early portion of the week under review about 400,000 to 500,000 lb of Lake Superior Ingot were sold for delivery four to six weeks ahead at 10.90¢ @ 11¢. Since then business has been on a very limited scale and the demand extremely tame. If anything, the market is weaker in tone. The leading producers name 11¢ as being their price, but no difficulty has been experienced in filling at 10.90¢ @ 10.95¢ such orders as came upon the market, while small outside lots are said to have been placed at 10.85¢, and, in one or two remote instances, at 10.80¢. Some export inquiry comes out at intervals, but the offers are almost invariably too much below sellers' ideas of value to admit of business and the prospects for immediate relief from that quarter are not particularly flattering at the moment. Buyers of casting Copper adhere to the policy of restricting purchases to immediate wants pending more ample supply, which, it is believed, will be forthcoming ere long. The moderate parcels moving go chiefly at 10 1/4¢ @ 10 1/2¢. The monthly report of the Bureau of Statistics affords the following com-

parison of exports during the 11 months ending November 30:

Ore.	1891. Tons.	1890. Tons.
To United Kingdom.....	33,253	18,669
Germany.....	2,064	928
Other Europe.....	216	1
Totals.....	35,533	19,628

### Ingot, Bars and Old.

	Pounds.	Pounds.
To United Kingdom.....	15,722,659	1,275,281
Germany.....	5,776,582	219,880
France.....	24,823,048	4,728,631
Other Europe.....	18,245,304	1,664,103
Other countries.....	168,190	139,322
Totals.....	64,735,823	8,027,216

**Pig Tin.**—Prices are lower by 7 1/4¢ @ 10¢ per 100 lb than they were at the date of last week's report, responding to the lower level of value that has ruled in the London market. The decline has led to some little speculative movement, chiefly in the form of winding up outstanding deals, involving probably 75 tons all told, but further than this it does not appear to have had any effect. Out of town trade that take blocks of 10 tons have purchased at 19.75¢, cash, and on local dealings as low as 19.72 1/4¢ was reached. Despite the narrow margin of difference in price the movement on out of town account has been of merely fair volume. Jobbing parcels have been sold at 19.90¢, cash, but 20¢ @ 20.10¢, regular terms, is generally quoted. Straits shipments during the first half of January were 1350 tons to Great Britain and America, and 100 tons to Continent, against 1100 tons and 50 tons respectively during the first half of December, and 1075 tons and 425 tons respectively in the last half of that month.

**Pig Lead.**—There has been a further downward movement in prices, but the latest decline appears to have brought matters into shape interesting to consumers, and instead of the monotonous report of slow trade that has been so common of late, a fairly large business is to go on record for the week. Fully 1200 tons have changed hands at 4.10¢ @ 4.15¢, of which quantity at least 500 tons went at the inside figures. The movement has latterly prompted more reserved offering and a firmer feeling on the part of sellers, the most of whom now ask 4.15¢, but this, in turn, appears to have acted as a barrier to further business and the market closes flat. Foreign Lead can be laid down in Boston at 4.40¢, duty paid, and that price, it is believed, would be made for New York delivery. This fact, along with the weakish condition of the European market, affords buyers more or less advantage, and, in connection with the narrow outlet of late for domestic product, is accountable for the change of attitude displayed by sellers.

**Spelter.**—Heavy stocks at the sources of supply and supreme indifference manifested by the chief consumers have caused a further decline in prices. The old story of export outlet at 4 1/4¢ has been revived, but thus far it appears to be a story only. In any event, prices for Western have dropped to 4.60¢ @ 4 1/4¢ without leading to business on foreign account, or, for that matter, stimulating home trade purchases.

**Antimony.**—No change of importance has taken place, the demand being slow and values still somewhat irregular.

**Tin Plate.**—Some varieties of Coke Tin Plate have met with rather freer sale for spring delivery, but in other lines the volume of future business is still comparatively light. Spot goods have moved out in moderate quantities only and rather slowly at that. In prices there have been few and only unimportant changes. We quote: Coke Tins—Penlan grade, IC, 14 x 20, \$5.25; J. B. grade, do., \$5.35; Bessemer do., \$5.30; Siemens



Steel, \$5.45. Stamping Plates—Bessemer Steel, Coke finish, IC basis, \$5.70; Siemens Steel, IC basis, \$5.80; IX basis, \$6.85 @ \$7. IC Charcoals—Melyn grade, \$6.50; for each additional X add \$1.50; Allaway grade, \$5.80; Grange grade, \$5.90 @ \$5.95; for each additional X add \$1.10. Charcoal Terns—Worcester, 14 x 20, \$5.75; do., 20 x 28, \$11.45; M. F., 14 x 20, \$7.40; do., 20 x 28, \$15; Dean, 14 x 20, \$5.45; do., 20 x 28, \$10.45 @ \$10.60; D. R. D. grade, 14 x 20, \$5.25; do., 20 x 28, \$10.10; Mansel, 14 x 20, \$5.40; do., 20 x 28, \$10.30; Alyn, 14 x 20, \$5.45; do., 20 x 28, \$10.50; Dyffryn, 14 x 20, scarce; do., 20 x 28, \$11.10. Wasters—S. T. P. grade, 14 x 20, \$5.10; do., 20 x 28, \$10; Abercarne grade, 14 x 20, scarce; do., 20 x 28, \$9.75.

## Financial.

The most striking features in the business situation are the unprecedented accumulation of money at this center and the continued enormous exports. The Associated Banks contain at the present time \$486,000,000, making New York one of the most important money centers in the world. Again, the exports continue on an enormous scale, chiefly owing to the movement of breadstuffs, so that for the first half of the fiscal year the aggregate of the latter for the entire country exceeds that of the same months in the previous year about \$76,000,000. Another special feature is the amount of railroad earnings, which exceed all expectations. The *Financial Chronicle* reports the gross earnings in December of 148 railroads at \$47,959,610, an increase of \$4,104,946 over the corresponding month in the previous year, with an increase in mileage of 2497 miles. The gain in gross earnings is equal to 9.36 per cent., while the increase in mileage is only about 2.7 per cent.

An unexpected development is the opinion of Judge Acheson of the United States Court on the application of the Interstate Commerce Commission to enforce their order against the Lehigh Valley Railroad on the complaint of Coxie Brothers, alleging discrimination in the transportation of coal. The injunction asked for is refused, the findings of the commission being deemed inconclusive. Notice was given of an advance on February 1 in Southern freight rates. Proportional rates now effective to East Mississippi River points will be withdrawn, and on the same date the following rates will be substituted from this city, Boston and Providence: First-class, 72¢; second, 63¢; third, 49¢; fourth, 35¢; fifth, 30¢, and sixth, 25¢. The rates are now 40¢, 40¢, 28¢, and for the fourth, fifth and sixth classes, 25¢. The advance is the result of the consolidation of the Southern Railway and Steamship Association and the South-eastern Mississippi Valley Association, which restores the harmonious order of things that existed among the Southern roads up to three years ago.

The volume of trade throughout the United States is fairly maintained, so far as indicated by Clearing House reports. The aggregate returns from leading cities indicate a gain of 17.9 % during the week, compared with the corresponding week last year. Excluding New York, the gain was 7.4 %. The principal gains are in Chicago, Baltimore, Kansas City, Minneapolis, Milwaukee and Detroit. New Orleans and Memphis went behind, indicating the stagnation in cotton.

The stock market tended to lower figures. There was good buying of the Chesapeake and Ohio, due to the announcement of a plan for extending the road and for exchanging preferred stocks for bonds; National Cordage appeared to be in demand, common stock making a

net gain of 1½ and preferred 10 %. Sugar Refiners' was broken down 7½, on news of an intention to issue \$25,000,000 more stock; the Gould properties were unfavorably affected by a charge of rate cutting, made before the Advisory Board of the Western Traffic Association by the Missouri Pacific, and there was a rumor, subsequently denied, that this road would withdraw from the association. There appeared to be speculative selling of the grangers, Louisville and Nashville, the Northern Pacific, Erie and Cattle Feeders, and there was more or less realizing during the week, the market closing heavy. One feature was a fall in bar silver in London to 42½d. per ounce, the lowest since May, 1889.

United States bonds were firmer, closing as follows:

U. S. 4½s, 1891, extended.....	100
U. S. 4s, 1907, registered.....	110½
U. S. 4s, 1907, coupon.....	110½
U. S. currency 6s.....	100

Foreign exchange was firm until Friday, when rates fell to \$4.84 @ \$4.86.

Money was in liberal supply at 3 % for 30 days, 3½ for 60 to 90 days, and 4 to 5 % for longer dates. Commercial paper was in good demand. The weekly bank statement was in some respects phenomenal. The deposits show a gain over the preceding week of \$9,010,000. The outstanding loans amounted to \$445,893,200, a gain of only \$1,543,300 over the preceding week, but \$62,388,400 more than in the corresponding week last year. The surplus reserve is \$24,576,025, an increase of \$5,614,600 over the preceding week, and the largest sum held in excess of the legal requirements since August 4, 1888.

General trade was quiet. Breadstuffs were dull, with lower cables, especially from Paris, where there was a less confident feeling. *Bradstreet's* makes exports from United States for the week of wheat and flour, 4,183,000 bushels, against 5,301,000 bushels last week; corn, 3,321,000 bushels, against 2,646,000 last week. Cotton slightly improved. New Orleans wired that 8,200,000 bales is still considered the maximum yield. In groceries coffee is in a good position. Teas are moving less freely. Sugars are in buyers' favor. Hog products are taken more freely for export on an advancing market. Coal is dull, at the lowest prices.

The imports at the port of New York for the week were valued at \$11,225,135. Of this amount \$3,806,462 were dry goods and the remainder general merchandise. The imports from January 1 to date were valued at \$20,904,117, as against \$21,924,854 for the corresponding period last year. The imports of specie for the week amounted to \$214,917, against \$253,860 for the corresponding week last year, and from January 1, \$353,191, against \$727,108 for the like period in 1891. The exports of specie for the week amounted to \$533,606, against \$255,231 for the corresponding week last year, and from January 1, \$888,041, against \$580,059 in 1891.

## Cleveland.

CLEVELAND, January 18, 1891.

**Iron Ore.**—The market has opened up in a very sudden way. The Ore men have been declaring right along that there would in all probability be no sales before March, but it is asserted that during the past five or six days some very liberal purchases have been recorded. It is not very easy to obtain the details of the transactions. The Carnegie Steel interests and the Illinois Steel Company seem to have bought about 1,250,000 or 1,350,000 tons of Ore. The Ore bought is from the Minnesota, Chandler, Norrie and other big mines. The Illinois Steel Company have a big interest in the Minnesota and

Chandler mines, and it is not very surprising that their Ore should have been contracted for thus early, but it was hardly expected that the sales to other furnaces would follow so quickly. The two interests named—Carnegie and the Illinois Steel Company—annually buy between one-quarter and one-third of the Lake Superior output. They have not completed their purchases yet, although the bulk of their supply for 1892 has been engaged. The best evidence obtainable is to the effect that the increase in cost over last season's average quotations, exclusive of the extra cost in transportation, is 25¢ @ 35¢ per ton. It has been freely prophesied that this increase would amount to from 50¢ to \$1 per ton, but the Pig Iron market is in no condition to stand so great a change in the cost price of Ore. Last season's record is looked upon as very much of a blank. Buyers insisted on and succeeded in getting Ore just as cheap as it could be delivered to them. The prices paid meant very little to the producers and vessel rates were forced way down to the lowest possible limit. The Ashland rate for quite a portion of the season was 85¢ @ 90¢. It has been supposed that it would be necessary to pay as high as \$1.50 per ton the coming season, but it is announced to-day that tonnage has been engaged, Ashland to Ohio ports, at \$1.25. This is cheerful news to the furnacemen. It is also reported to-day that in addition to the sales made to the big Steel concerns, the furnacemen are buying quite liberally. Some Ore men say they have made no sales as yet, but others admit that the market is really opened, and that sales have been made to-day on terms that cannot be made public, but that represent advances over last year. The advances, it can be authoritatively stated, amount to less than 50¢ per ton for all desirable Ores. There is little or no unsold Ore on the docks, and the rush to the furnaces still goes forward at a great rate.

**Pig Iron.**—The market shows some signs of improvement, although some dealers claim that they have not felt the change. It is certain, though, that the demand is much better and that Bessemer and Forge Irons are asked for with considerable vigor. The opening of the Ore market has temporarily diverted attention in that direction.

**Nails.**—Trade is rather unsatisfactory and prices are not very firm even on the basis of \$1.70 @ \$1.75 for Steel Wire Nails.

**Manufactured Iron.**—A very fair demand is reported, but prices remain rather low. Common Bar Iron is quoted at 1.65¢ @ 1.70¢. Sheets are quite scarce. Structural Iron is selling quite freely.

**Scrap.**—No. 1 Railroad Wrought is selling for \$18.50 @ \$19 and Cast Scrap at about \$13 per ton.

**Old Rails.**—The market is not very strong. A sale or two of Old Americans at \$22.50 @ \$23 has occurred, but little else.

(By Telegraph.)

It is absolutely known to-day, Wednesday, that the sales of Bessemer Ore made during the past few days aggregate nearly 3,000,000 tons. One firm alone, Pickands, Mather & Co., are reported to have sold 1,000,000 tons. It can be stated authoritatively that the advances over last season's rates are from 35¢ to 40¢ per ton and will not vary from these figures. This advance includes the increased cost of transportation, which really amounts to about 25¢ per ton. There is, of course, little demand for non-Bessemer Ores, nor is there likely to be for a few weeks to come. It is said that none of the Ore sold commanded an ad-

vance exceeding 50¢ per ton over last season's rates, while many of the sales are made on the basis of a 25¢ advance over the prices for 1891. The vessel men are receiving exactly 25¢ per ton advance over last season's rates, and the additional revenue to the Ore men means very little. However, there have been some large sales at an advance of 50¢ per ton over last season's prices, but the average increased cost is from 35¢ to 40¢ per ton. Buyers and sellers are equally surprised that the market should have opened so suddenly and that so much business should have been crowded into a few days. The furnacemen are eagerly asking for quotations and seem anxious to place their orders for 1892, despite the fact that the Pig Iron market is none too buoyant. The furnacemen seem fairly well pleased with the present situation.

### St. Louis.

OFFICE OF *The Iron Age*, 214 N. Sixth st.,  
St. Louis, January 18, 1892.

**Pig Iron.**—The market continues in the same shape as last reported. Some few sales have been made during the past week at current rates, but there are some furnaces who are offering Irons at prices that are 25¢ per ton less than those quoted herewith. Foundry Irons are not so plentiful as they were a few weeks since, and prices are trifle firmer. The outlook is improving and inquiries at hand indicate that an early revival of trade will likely be experienced. There is some improvement in the demand for Car Wheel Irons, and during the past week several good-sized orders were placed, quantities averaging from 50 to 250 tons, at full prices. Stocks on hand on the furnace banks are not very heavy, and as a number of large furnaces in the South have blown out for repairs, stocks are not likely to increase very rapidly. Consumers are beginning to evince some interest in the market, and as manufacturers who use Iron in its various forms are all well employed, the outlook can be called decidedly encouraging. For prompt shipment we quote as follows, for cash, f.o.b. St. Louis:

Southern Coke, No. 1 Foundry,	\$15.25 @ \$15.50
Southern Coke, No. 2 Foundry,	14.25 @ 14.50
Southern Coke, No. 3 Foundry,	13.50 @ 13.75
Gray Forge.....	13.00 @ 13.25
Southern Charcoal, No. 1 Foundry.....	17.00 @ 17.50
Southern Charcoal, No. 2 Foundry.....	16.50 @ 16.75
Missouri Charcoal, No. 1 Foundry.....	15.50 @ 16.00
Missouri Charcoal, No. 2 Foundry.....	15.00 @ 15.50
Ohio Softeners.....	17.75 @ 18.75

**Bar Iron.**—A steady trade is enjoyed in this department. Mills are making preparations for a large trade, and the way the year has opened up seems to indicate that they will have plenty of business for an indefinite period. We quote as follows: Carload lots at East St. Louis, 1.70¢ @ 1.75¢; small lots from store, 1.85¢ @ 1.90¢, according to quantity.

**Barb Wire.**—A moderate business is being transacted at unchanged prices. The inclement weather prevailing since the first of the year has prevented outside work to a limited extent, and a falling off in the demand for Barb Wire was not at all unexpected. Jobbers report a fair trade. We quote as follows: Painted, \$2.70; Galvanized, \$3.20; terms 60 days, or 3% discount for cash in 10 days.

**Wire Nails.**—A firmer feeling is experienced in this department. Inquiries are fairly large, and notwithstanding the

large quantity of Nails sold during the past 30 days, the demand is holding up remarkably well. The Cut Nail is losing ground and the Wire Nail is making new friends daily. Jobbers quote \$2.10 for lots from store. Carload lots from mill from \$1.85 to \$1.90.

(By Telegraph.)

**Metals.**—Pig lead continues to lose strength daily. As predicted in our report last week, the market is again lower and offerings are freely made at 3.90¢, with no buyers in sight. Sales are light and the impression still prevails that the market will continue in its downward course. During the week a few hundred tons changed hands at 3.90¢, but large buyers are waiting for a further slump, and it seems probable that they will not have to wait very long. Spelter is unchanged. No business is transacted in this metal at the moment and price is nominally from 4.30¢ to 4.35¢ for ordinary quantities.

## British Iron and Metal Markets.

[Special Cable Dispatch to *The Iron Age*.]

LONDON, WEDNESDAY, January 20, 1892.

There is no change yet in the situation of the market for Scotch warrants. Outside interest is not manifested, and the syndicate keep the price at 47/. Cleveland warrants have moved very little either way from 38/, and the market is quiet. Hematites rather flat also and a shade weaker, with business at down to 47/4. Consumptive demand for Pig Iron continues slow in the absence of improvement in the Manufactured Iron trade. Warrant stocks show a further increase. The totals are now 503,000 tons Scotch and 157,000 tons Cleveland. There are at present in blast 76 Scotch, 88 Cleveland and 43 Hematite furnaces.

Prices for Pig Tin have undergone but little change during the week, and business has been light until within a few days, when futures attracted more attention. The movements of Silver have more or less affected prices of Tin, and the late turn for the better, in the former, along with more numerous small purchases by large dealers, is stated as being the main cause of the advance to £90 for prompts.

Copper has been quiet nearly throughout the week, and prices averaged lower, chiefly under the influence of restricted consumptive demand. American advices have caused some uneasiness, operating early in the week to impart confidence, and subsequently the reverse. Buyers hold off as though awaiting a further fall in prices.

Tin Plate market has not changed a great deal. Business at the quarterly meetings is represented as having been equal to anticipations, and, although buyers and makers still differ widely on prices, some good orders were closed. The business was chiefly in ordinary Bessemer Cokes, 12/6. For future deliveries makers ask higher prices. Charcoals remain quiet, but light. Terns are more active.

Ship Plates quiet at £6. 2/6, f.o.b. Barrow.

A leading Indian railway company are offering a large parcel of Old Iron Rails in this market.

**Scotch Pig Iron.**—Few changes in prices of makers' Iron and the demand still flat:

No. 1 Coltness,	f.o.b. Glasgow.....	56/
No. 1 Summerlee,	" " " ".....	54/
No. 1 Gartsherrie,	" " " ".....	54/
No. 1 Langloan,	" " " ".....	54/6
No. 1 Carnbroe,	" " " ".....	48/6
No. 1 Shotts,	" at Leith.....	56/
No. 1 Glengarnock,	" Ardrossan.....	55/
No. 1 Dalmeilington,	" " " ".....	49/6
No. 1 Eglinton,	" " " ".....	49/

Steamer freights, Glasgow to New York, 1/; Liverpool to New York, 7/6.

**Cleveland Pig.**—There has been a very fair business and the market remains steady at 38/, f.o.b., for No. 3 Middlesborough.

**Bessemer Pig.**—Business does not improve, and prices are barely steady at 48/6 for West Coast brands, Nos. 1, 2 and 3, f.o.b. shipping port.

**Spiegeleisen.**—The demand continues slow and prices are in buyers' favor. English 20% quoted at 80/, f.o.b. shipping port.

**Steel Rails.**—No change, demand still lacking spirit. Heavy sections quoted £4. 2/6 and light sections £5 @ £6, f.o.b. at N. W. England shipping point.

**Steel Blooms.**—Market quiet and unchanged, quoting £4. 2/6 for 7 x 7, f.o.b. at N. W. England shipping point.

**Steel Billets.**—Business moderate and makers' prices unchanged. Bessemer, 2½ x 2½ inches, quoted at £4. 5/, f.o.b. at N. W. England shipping point.

**Steel Slabs.**—The market remains very quiet. Bessemer quoted at £4. 5/, f.o.b. at N. W. England shipping point.

**Old Iron Rails.**—Demand quiet, but the market steady. Tees quoted at £2. 17/6 @ £2. 18/3 and Double Heads £3 @ £3. 2/6, f.o.b.

**Scrap Iron.**—Dealings moderate at unchanged prices. Heavy Wrought Iron quoted at £2. 10/ @ £2. 12/6, f.o.b.

**Crop Ends.**—The market remains quiet and unchanged. Bessemer quoted at £2. 12/6 @ £2. 15/, f.o.b.

**Tin Plate.**—No change in character of demand or in prices. We quote, f.o.b. Liverpool:

IC Charcoal, Alloway grade.....	14/3 @ 14/9
IC Bessemer Steel, Coke finish.....	12/9 @ 13/3
IC Siemens.....	2 13/3
IC Coke, R. V. grade.....	@ 12/9
Charcoal Terns, Dean grade.....	@ 12/3

**Manufactured Iron.**—The general market remains quiet and prices are without change. We quote, f.o.b. Liverpool:

Staff, Ordinary Marked Bars	8 10 0 @ 8 15 0
" Common "	8 12 6 @ 8 15 0
Staff, Bl'k Sheet, singles.....	7 15 0 @ 7 15 0
Welsh Bars (f.o.b. Wales).....	5 12 6 @ 5 12 6

**Pig Tin.**—The market quiet to-day and barely steady. Straits quoted at £80. 17/6 for spot and £90. 2/6, three months.

**Copper.**—Rather quiet market to day, but prices steady; G. M. B. quoted at £45. 10/ for spot, £46, three months, and best selected at £50.

**Lead.**—The market remains quiet and prices are again easier, at £11 for Soft Spanish.

**Spelter.**—Demand moderate and prices easy, at £22. 2/6 for ordinary Silesian.



# HARDWARE.

## Condition of Trade.

FROM SOME MERCHANTS and manufacturers we have advices of a decided increase in the volume of business, but the general report is to the effect that the demand is not as yet very active, the trade in different parts of the country holding back their orders for one reason or another. The cold weather which has prevailed, especially in the West and Northwest, has had the effect of stimulating the demand for winter goods, while at the same time, as it interferes to a certain extent with outdoor work, it has checked the demand for other goods. Many of the large houses are showing a good deal of conservatism in the placing of orders, and while buying a little more freely than during the last month or two of 1891, are not disposed to cover the season's needs, and are purchasing only for their early requirements. They are, however, watching the market very closely, and when indications of increased activity and of any stiffening in prices are observable, they will undoubtedly order much more freely. Notwithstanding that the trade were disappointed in their expectations as to the volume of the fall business, there is still confidence that trade during the present year must be of exceptionally large volume. Prices are without material change, and manufacturers as a rule are pursuing a conservative policy and making preparations for an active season. The financial situation is regarded as exceptionally satisfactory, and collections as a general rule throughout the country, the South being an exception, are good.

### Chicago.

(By Telegraph.)

Heavy snowstorms and the coldest weather for years have together interfered seriously with the Hardware trade of the Northwest during the past week. Business has been opening up in fine shape, with every day showing an improvement over its predecessor. But now outdoor work has been almost wholly suspended, without any chance of an early resumption. Jobbers believe that the enforced rest will make the demand still greater when mild weather intervenes. The inquiry for staple goods has been growing of late and prices have been stiffened up by joint action of the local Hardware merchants. Some of them have already notified their traveling men to take no more carload orders for Wire Nails, having already sold more than they should have done at the low price ruling. Bright Tinplate has been reduced

to a \$7 basis, owing to the efforts of some sellers to run off old duty stock at concessions.

### St. Louis.

(By Telegraph.)

Trade in the Hardware line continues to gain in volume from day to day. A heavy demand is now experienced in winter goods. The present weather, which is decidedly wintry, extends throughout the entire West and Northwest, and jobbers are enabled to clean up some lines of goods, such as Skates, Sleds, &c., which they have been carrying for two or three years past. The outlook for a large spring trade is encouraging with the exception of the Southern trade, which will undoubtedly be light. Prices are maintained in nearly all lines. Even Wire Nails, which have been a disturbing factor for some time past, are beginning to show some strength. Cut Nails are dull. The general condition of trade is encouraging and the outlook promising.

### Philadelphia.

SUPPLER HARDWARE COMPANY.—As is usually the case this early in January, there is but little to report, there having been fewer changes in the prices of Hardware than is usual at the opening of a new year; therefore salesmen could have started off on their January trips with former prices without much injustice to either their customers or the houses they represent, but as the trade throughout the country prefers a little breathing spell immediately after the holidays, and salesmen like relief from the road, both have been made happy in this particular. Not so with office duties. At no time of the year is greater activity necessary inside of offices. The rearranging of price-lists, pricing of the year's inventory, settlements of 1891's books, with numerous other duties, all entail a vast amount of work. Mail orders indicate some activity in trade throughout the country, which looks somewhat encouraging to salesmen, who now feel ready to start on their usual trips. The activity in the stock market has temporarily utilized idle money in hands of capitalists realized from the large disbursements of interest. This has caused a speculative advance in stocks, which many European holders have taken advantage of and have unloaded their holdings. The American people are always restless when holding idle money. This feeling occasionally causes a loss to the nervous public, who are only willing to learn from personal experience. Collections are better the further West one's trade extends; the middle trade are at present responding less promptly. The Southern States are hampered from making their customary remittances owing to various local causes.

The export of cotton has not fallen off, but the unprecedentedly large growth during the last two years has caused re-

duction in prices, which are scarcely remunerative, and owing to the present low prices holders in some locations, who are not compelled to sell and are waiting for an advance in price, are causing inconvenience to the immediate mercantile trade. Whether the advance will occur or not is an unsettled problem. In some of the Southern districts unfortunate land speculation has ruined merchants, who have not realized the fact that where one or more industrial enterprises have started in their midst, while it gives additional employment, there is no general rule why property should double in value, and the only safe plan for merchants to adopt is to invest unemployed money in real estate. No better illustration of this could be found than in our own State, which is dotted all over with manufacturing industries. They are found in almost every town and city, but nothing other than conservatism, which has induced merchants to avoid speculation, would at various times have caused bankruptcy to many in one half of the towns in the State. The suggestion of a diversification of crops, as proposed in the convention recently held at Memphis, appears to be well taken. This should be done, and, in addition to cotton agricultural products raised, not only in sufficient quantity for their own wants, but to enable them to supply those employed in the manufacturing enterprises which are being dotted over the Southern States, with additional acreage for distant shipments, in which they stand an equal chance with the Western farmers, as the freight would be less to the sea coasts for export shipments. The bill recently proposed in Congress to the effect that an infringement upon patents granted by the United States should be considered a criminal offense we look upon as a most important one. The results of a man's labor should be wholly his own. When a mechanic works through the day and far into the night, and brings forth results by which frequently the entire country is largely benefited, he certainly is entitled to the results of his labor, and when in addition to this he pays the Government in order to secure to himself these results, which the Government acknowledges by the granting of patents, he certainly is entitled to protection from infringers more rigid than is now the case. We have known of a poor man, infirm and aged, on the verge of starvation, with a sick and helpless family depending upon him, arrested by an officer of the law and prosecuted by the city attorney for stealing a loaf of bread. On the other hand, frequently men of affluence have adopted the belongings of another and boldly flaunted them before the merchant, who frequently doesn't stop to consider it is not the seller's right to dispose of an article which embraces therein the rights of others, but buys and sells it to persons who are unaware of the position in which they place

themselves. To stop this practice requires a long and tedious process of law, and at present, no criminality being attached to it, only money consideration can be secured, which frequently does not more than settle the expenditure. It is evident from the earnestness from which this matter is proposed that many have felt the need of greater protection in our patent laws.

#### Omaha.

**LEE-CLARKE-ANDRESEN HARDWARE COMPANY.**—The past two weeks have been given up largely to the annual "round up" and to preparations for the spring campaign. The volume of business for the latter half of 1891 shows a very gratifying increase, and notwithstanding the slight declines in values that have occurred during the year past the average jobber has been enabled to figure out a reasonable balance on the right side of the ledger. The new year opens with a most favorable outlook for the jobbing trade of Omaha. One of the most encouraging indications is the feeling of confidence everywhere apparent in the country. It is safe to say that the prospects before the jobbing trade were never brighter, and that if their expectations are anywhere near realized 1892 ought to be a very prosperous year. January, as a rule, is not a very active month, but this year there are many signs which indicate that trade will hold up unusually well. It is noticeable that there is any amount of corn and small grains yet unmarketed in this territory. Only those sections that have suffered from short crops for the past few seasons have been compelled to realize by marketing their productions as early as possible. We should say by far the larger half of the breadstuffs raised in the territory west of this city is still held by producers either for higher values or on account of shortage of room for transportation. If the commonly accepted reports regarding the magnitude of deficiencies of breadstuffs in Europe are even approximately correct no anxiety need be exhibited by our people in reference to the ready marketing of our surplus at satisfactory prices.

#### St. Paul.

**FARWELL, OZMUN, KIRK & Co.**—We have but little to note at this time that is special. The wholesale trade and a large part of the retail trade also has been busy taking stock and getting ready for the next year's business. The winter, upon the whole, has been favorable for trade and collections, there having been no snow blockades of the railroads, and the country roads have been fully as good as usual. At the same time, with the decline in the price of grain, collections have been somewhat slow, as farmers are not disposed to sell more grain at present than they find absolutely necessary. The Hardware trade in all lines will probably be dull until March, and the time will be mainly occupied in getting ready for the spring trade, which it is now expected on all hands will be satisfactory. The disposition of the wholesale dealers, however,

is largely, we think, toward being conservative in credits, as, with the failure of the crop of the coming season, a large indulgence of credits to the trade might work serious harm and in that event make the large crop of the past year a disadvantage in the end. We know of nothing special to note as to prices. Later developments will afford more room for comment. The expectation of the trade now is that prices will be well maintained and fair profits realized.

#### Cleveland.

**THE W. BINGHAM COMPANY.**—1892 has opened up fairly well and with an encouraging outlook, and it seems safe to predict that the business for this year will exceed that of last, though whether it will show an increased percentage of profit is problematical. So far as appearances can be depended upon, everything presages a prosperous year. The loss by bankruptcy through our territory last year was little, if any, in excess of that of the year before, while the amount of business done was much larger. Crops were abundant and brought fair prices, and there is a very general feeling of satisfaction and of confidence in business circles.

Our salesmen are again on the road, and the orders that are beginning to come in show that merchants are looking ahead to their spring trade. There are few changes in prices, the declines and advances being about equally distributed. Advances in some staples must be expected, as it would seem that in some lines the cost to manufacture has been about reached. Nails are selling at \$1.80 for Wire and \$1.60 for Cut from stock. Fence Wires are moving slowly.

#### Louisville.

**W. B. BELKNAP & Co.**—Trade in some ways is encouraging and in some disappointing. It may be said to run irregularly. There are days in which large mails make a good showing, others again where they are light and unsatisfactory.

The continued low price of cotton has a very depressing influence on the whole Southern market. We can hardly expect much recuperation till the cotton is out of the way or the price improved. Hope springs eternal, and it is said that the coming crop will be raised very cheaply, owing to the low price of all commodities which enter into the planter's expense. Moreover, he is getting a good price this year for his cotton seed, there being an excellent demand by the oil refiners for it. Besides, the grain brokers declare that a more diversified crop was raised South this year than ever known before in the way of staple foods for man and beast, so that there is less money to be paid out on that account.

Prices are very evenly maintained in all lines of Hardware; even where combinations go to pieces there is but little reduction, showing that the foundation is a solid one based on cost and not fictitious values made in meeting by resolution. In Bar Iron there is a little better feeling, but this, we take it, springs not so much from increased consumption as from reduced

production. Money is working much easier, but loans are carefully scrutinized and full rates maintained. First-class bonds are in request for investment and not over plenty.

#### San Francisco.

**HUNTINGTON HOPKINS COMPANY.**—The Hardware trade is considerably interested at present in the outcome of the hydraulic miners' convention, which is to be held in this city some time during this month. Delegates have been selected from each county in the State, who are supposed to be friendly, or, at least, not opposed, to a revival of this industry, provided the projectors of the movement can show the authorities of the State and general Government that the harm resulting is lost sight of in the increased prosperity it would give to this section of the country. If hydraulic mining is again allowed to go on, it will renew a demand for supplies that was almost entirely shut off when it was enjoined. Trade in all branches is quiet at present, as is almost invariably the case this time of the year, and we have learned to look forward to it as the regular condition of things. This being our rainy season, very little building is going on, especially in the city; the architects, however, are fairly busy, so that with the advent of clear weather we expect a very perceptible brightening up in this line.

With the opening of the new year there was a decided weakening in prices of the heavy staples; Refined Bar Iron is now being sold at 2½ cents base. The market at present on Nails is as follows: Iron Cut, \$2.40; Steel Cut, \$2.50, and Standard Steel Wire, \$2.75 base, with the end probably not yet. The local Cordage factory has advanced pure Manila and Duplex Rope ¼ cent and Bale Rope 1 cent per pound, dropping the "B Manila" grade, which they have been making for some time. Collections do not materially improve over what they have been for the past two months. Rains have been abundant, much to the joy of the farming community, and as they are the bone and sinew of the country, we look for better times in the near future.

#### Boston.

**BIGELOW & DOWSE.**—Salesmen report the retail dealers so busy in taking account of stock that they have no time or inclination to buy except for immediate wants. Some few orders have been placed for spring goods, but generally the salesmen report that they will have to wait until February before there will be much increase in orders. Prices remain stationary and are well maintained.

#### Notes on Prices.

**Cut Nails.**—The market in Cut Nails continues in a sluggish condition and without any especially new features. Both the mills and the merchants are pursuing a careful and conservative course, the former being disposed to curtail their production and avoid an undue accumulation, while the latter are, as a general rule, buying in only moderate quantities to meet



early requirements. Some of the large purchasers have, however, placed orders which will cover their wants for some time to come, but on the whole, while the trade recognize that prices are low, they are indisposed to place large orders until there are some definite indications of a strengthening in price. Existing quotations are firmly maintained by manufacturers, who refuse to make further concessions. The current price for round lots at mill is \$1.45, slightly lower prices being made in special cases. New York quotations are \$1.55 to \$1.60, on dock. Small parcels from store, either Iron or Steel Nails, are \$1.65 to \$1.75.

*Chicago, by Telegraph.*—Steel Cut Nails are in moderate demand from manufacturers. The large buyers pretty generally say they do not expect to be in the market again until toward March, unless their own trade becomes much more active than now anticipated. Factory lots are quoted at \$1.60 to \$1.65, Chicago, on 30-cent average. The jobbers have stiffened up their prices and now quote \$1.75 for small lots and \$1.70 for carloads. They say prices had gradually run down to actual cost and they are now determined to realize a little profit, enough at least to pay for handling them.

**Wire Nails.**—The somewhat improved condition referred to in our last report still continues, and slightly higher prices are ruling than were current a few weeks ago. As a general quotation for carload lots, at mill, \$1.70 is named, but slight concessions are made from this figure on especially desirable orders. Less than carload lots are quoted from 5 to 10 cents higher. Small lots from store in New York are held at \$1.95 to \$2, and at figures ranging from \$1.85 to \$2 in other markets, according to their proximity to leading mills.

*Chicago, by Telegraph.*—Manufacturers of Wire Nails report a fair trade for the season, and are now inclined to stiffen their prices to \$1.85, Chicago. The jobbers are appreciating the fact that they may be unable to place the stock which they have lately been recklessly unloading at low prices and now name \$1.85 as bottom for carloads and \$1.90 for small lots. Some of them have determined to withdraw carload prices altogether for the time being, having sold more than they should have done.

**Barb Wire.**—There is more activity in Barb Wire than for the past few weeks, and the trade are beginning to place their orders in anticipation of the season's requirements. The volume of business, however, is not especially heavy, but is regarded as fair and satisfactory. Prices are without any change, and are regularly maintained by manufacturers, with a disposition also on the part of the jobbers to avoid the cutting of prices which has sometimes characterized the marketing of this line of goods.

*Chicago, by Telegraph.* — Barb - Wire manufacturers report contracts coming in at a lively rate. Merchants now realize 'here is a time about March 1 when every

factory is so busy that it cannot make prompt shipments, and they are evidently anxious to avoid the difficulty by purchasing early. No change has been made in prices or terms. Announcement is made that Iowa Steel Barb Wire Company of Marshalltown, Iowa, will remove their factory to Wireton Park, near this city.

**Machine Screws, &c.**—In connection with their new price-list the New Britain Hardware Mfg. Company, New Britain, Conn., quote the following discounts from regular list on Standard Machine Screws. Terms, cash in 30 days:

	Per cent.
Iron Set Screws, Case Hardened.....	70
Steel " ".....	70
Iron Set Screws, Soft....	70 & 5
Hexagon Head Cap Screws, Soft.....	60
Square " ".....	65
Round " ".....	50
Fillister " ".....	50
Flat " ".....	50
Button " ".....	50
Collar Screws, Soft.....	25
Milled Iron Studs, Soft.....	55
Planer Head Bolts, ".....	65
Taper Pins, ".....	50
Boiler Patch Bolts quoted on application.	
Round or Fillister Head Machine Screws, Brass or Iron.....	60
Flat Head Machine Screws, Brass or Iron.....	65
Nuts, Finished Case-Hardened, and Semi- Finished to 1 1/4 inches.....	60
Nuts, Finished Case-Hardened, and Semi- Finished to 1 1/2 inches.....	55

**Ice Tongs, Pincers, &c.**—We give below the prices on Ely's Ice Tongs, Pincers and Hay Fork Grapples, put on the market by E. C. Ely of Leona, Pa.:

<i>Ice Tongs.</i>			
12	18	24	28 inch.
\$3.00	4.50	9.00	10.00 per dozen.
<i>Steel Pincers.</i>			
6	8	10	13
\$2.75	3.75	4.75	5.50
<i>Cutting Pincers.</i>			
6	8	10 inch.	
\$2.75	3.75	4.75 per dozen.	

*Common Sense Hay Fork Grapple.*  
Steel Jaws, per dozen.....\$4.50

**Brass Butts.**—Wrought-Brass Butts have of late been gradually settling in price as an effect of the low price of Copper. Revised quotations are accordingly made on these goods.

**Bright Wire Goods.**—The meeting of the associated manufacturers was held last week, but no change was made in quotations. The market in these goods is referred to as in a satisfactory condition.

**Coffee Mills.**—Since the termination of the combination between the manufacturers of Coffee Mills the market has been in an unsettled condition and prices are somewhat irregular. Many Mills are sold from the regular list at discounts ranging from 60 to 60 and 10 per cent., but a number of leading patterns are sold at net prices which are lower than the quotation given above. The irregularity in these goods is induced in good measure by the competition of Western manufacturers.

**Glass.**—The Glass trade is practically at a standstill, awaiting the action of the manufacturers at their next meeting. There appears to be some uncertainty in the minds of New York Glass jobbers as to the exact date on which the meeting is to be held, but it will probably not be later than January 27. There is considerable interest manifested as to the outcome of this meeting, although it is not definitely

known that a line of action has been decided upon. Prices up to the present time are without change, and there is little business being done. There is nothing of interest in the imported Glass market, business being quiet, with no immediate change in prices probable. Quoted prices remain as follows: American Window Glass, in carloads, 80 and 10, and 5 per cent. discount; less than car lots, 80 and 5 per cent. discount; French Window Glass, 75 and 10 per cent. discount; American Plate is held at a discount of 50, 10 and 5 per cent., and imported Plate at a discount of 60 per cent.

### Export Notes.

**T**HE CENSUS returns July 1, 1891, give the Cape Colony a population of 1,600,000, of whom 400,000 are Europeans.

The population of Natal is nearly 400,000, there being but 50,000 to 60,000 Europeans in the colony. Here the whites live among a great population of natives (Zulus), who are fierce and warlike. It has been so hard to get regular work from these natives that the Europeans had recourse to Indians, whom they imported from the Madras coast to about 50,000. These are the house servants, the gardeners, the farm and plantation laborers.

Natal imported from the United States in the year closing June 30, 1891, \$630,000, which is more than from any other country except Great Britain. Of this \$116,000 was Hardware, \$60,000 Agricultural Implements and 12,500 was Machinery; presumably the goods which were forwarded in bond to the Transvaal or Free State are not included.

Natal is finding a ready market for her coal, which will prove a great boon. Hitherto all coal used in South Africa and by the shipping has come from England.

The gold exports from Cape Colony now average about \$600,000 a week.

Ceylon tea growers have raised over \$75,000 toward their exhibit at the World's Fair, proposing also, as they print, "a Ceylonese band," in order to conform to the American methods of drawing attention to specialties.

## An Inquiry.

**Glass Rack.**—We take pleasure in laying the following request before our readers and shall be glad if it elicits the desired information, which will be of interest, doubtless, to many Hardwaremen:

Will some reader of your paper describe some convenient and practical Glass case or rack for keeping about a box each of staple sizes of Window Glass, say a stock usually carried by a dealer who has about \$6000 worth of Hardware, Stoves, Tinware, &c., and who keeps about \$200 to \$300 worth of Glass?

F. E. KOHLER & Co., Canton, Ohio, have recently obtained a patent on a new style flexible and oscillating Curry Comb. They advise us that they have also secured control of the "bottom patent" to "flexible" Curry Combs, and will control the market on this style of comb.

— THE —

## Hardware Dinner.

THE PROJECT of having a Hardware dinner, which we have alluded to as under consideration by some of the leading houses in the trade, promises soon to be carried into effect under very favorable auspices. It is recognized by the trade that it is desirable, for several reasons, that there be an opportunity presented to those who are engaged in the same or similar lines of business to meet in a social way for the promotion of mutual acquaintance and the cultivation of cordial relations. When the idea of a dinner which should bring together those in this city who are interested in Hardware and related trades was first broached, the matter was so out of the usual course of things in our trade circles that many were disposed to question its feasibility and the desirability of even making the attempt. But the more the project has been considered the more favorably has it been regarded, and it now looks as if the trade would take up the matter with the enthusiasm and unanimity which we indicated a few weeks since as necessary to make it a most complete success.

In commending this matter to the trade in this city and vicinity we are confident that the general purpose of the proposed gathering will meet with their approval. In the city of New York, notwithstanding the fact that vast interests are represented in connection with the Hardware, Metal and allied industries, there is comparatively little social contact, and to a considerable degree there is the absence of acquaintance among many of the merchants and manufacturers in these lines. The very extent of the interests involved permits this isolation, as many of the concerns have their hands full of large enterprises and their time fully engrossed by the pressure of their business cares. While the trade of the city covers the entire country and touches foreign lands at many points, the direct dealings between the houses here are comparatively limited. The result has been that for years there has not been among Hardwaremen and their *confrères* in similar lines a single social gathering for the trade at large. This is the more to be regretted as in the lines of business of which we are speaking there are many men who, by their ability, character and position, are well worth knowing. They are entitled to the pleasure of meeting one another at least occasionally, and something of contact with them would be a

privilege and advantage for many of the younger men of the trade.

It is also to be borne in mind that it is not unlikely that there might be advantages in a business way which might result from a spirit of fraternity and mutual good feeling, as there are from time to time matters coming up which are deserving the united action of the trade. It is also possible that it might be desirable and feasible to form a permanent organization of some kind, perhaps of the nature of a Hardware club. It is, however, rather premature to take any action in this direction, or even to seriously consider the matter. While there would appear to be certain advantages which might be secured by action wisely taken looking to this end, it is recognized that there are serious difficulties in the way which suggest cautious and deliberate procedure. The first thing certainly is to make the proposed dinner a success, and to do this it must be taken up by itself and unconnected with the question of any subsequent action.

On another sheet we reproduce in *fac-simile*, a diagram of a dinner of the Hardware trade of the city at the St. Nicholas Hotel, Wednesday evening, January 18, 1890. Showing as it does the arrangement of tables and giving the names of the houses represented, it cannot fail to be of special interest. It gives, it will be observed, a bird's-eye view of the trade of New York before the war, when its jobbing interests were at their height. It will repay careful study from Hardwaremen of to-day, and those who have had a long connection with the trade will have their recollection carried back to many houses which have disappeared from the field, while the younger men will have their attention directed in a vivid way to the names of concerns which are recalled only as a tradition. It is, however, very pleasant to observe that many of the houses represented are still in existence, and among the leading houses of the country. But there is a most impressive lesson in the extent of the changes which have taken place in the trade.

This diagram is, however, deserving of study by the gentlemen who have charge of the proposed dinner, as indicating the broad and liberal principles on which, in the earlier days, Hardware dinners were arranged and the completeness of the representation of the allied trades and other commercial interests. It is obviously desirable that at the dinner now in prospect not only Hardware in its narrower sense should be represented, but also the Cutlery trade, Sheet-Metal industries, Plumb-

ers' and Steam-Fitters' lines, and other related branches of the trade.

It will also be recognized as desirable that invitations should be extended to the Hardware and Metal associations of other cities, and that an opportunity to attend should be given to representative manufacturers and merchants who, though not engaged in business in this city, are connected with its trade. The presence of such would add largely to the pleasure of the occasion and would tend to make it what it is designed to be—a representative gathering of the trade in Hardware and related lines which centers in New York.

The general plan is—without any details having been settled—that the dinner shall take place in a month or two under the direction of a committee of arrangements of which Webster R. Walkley of Peck, Stow & Wilcox Company is chairman, J. H. Kennedy, secretary, and Charles Morrill, treasurer. This committee is not yet complete, but as far as constituted will consist of the following gentlemen representing the different interests:

W. R. WALKLEY..Peck, Stow & Wilcox Co.  
DAVID H. JAMES....Central Stamping Co.  
J. C. MCCARTY.....J. C. McCarty & Co.  
W. A. GRAHAM...John H. Graham & Co.  
ROBERT K. DANA,  
Washburn & Moen Mfg. Co.  
U. T. HUNGERFORD.....Wallace & Sons  
A. H. SAXTON.....A. Field & Co.  
WILLIAM T. SMITH..Smith, Lyon & Field  
A. ALFORD.....Alford & Berkele Co.  
R. L. WOODROUGH....National Saw Co.  
J. D. FOOTE...Kearney & Foote Co.  
HENRY M. LYON..Sickels, Sweet & Lyon  
EUGENE BISSELL.....Haydock & Bissell  
C. E. JENNINGS....C. E. Jennings & Co.  
CHARLES MORRILL.  
P. R. JENNINGS.....Bruce & Cook  
W. B. FOX.....W. B. Fox & Bro.  
W. T. NORTON,  
American Axe and Tool Co.  
JAMES SURPLESS..Surpless, Dunn & Alder  
C. E. PARKER.....Charles Parker & Co.  
J. P. TOPPING.....Topping & Fox  
EDGAR UNDERHILL,  
Underhill, Clinch & Co.  
A. O. KITTREDGE.....The Metal Worker  
J. H. KENNEDY....Hardware  
W. H. FOWLER,

### Hardware and Metal Review

R. R. WILLIAMS.....THE IRON AGE

The Committee of Arrangements was appointed January 16, at an informal meeting, at which many of the leading houses in the trade were represented. Some in hearty sympathy with the proposed dinner were unable to be present, but the meeting was a thoroughly representative one. The project is certainly started under circumstances that promise complete success. The committee is not fully constituted, and it is intended that other persons should be added to it at any day, so as to give representation to all interests.

In our next issue we shall probably be in a position to give further and more particular announcements in regard to the matter, when some definite action has been taken by the Committee of Arrangements in furtherance of the project.







E. F. Sanderson

62

Chas. Congreve & Son	61	A 60	C. Vandervoort
Septimus Crooks	59	58	Thos. Hill & Co.
do.	57	56	Marsh Bro. & Co.
Astine Ward	55	54	W. & C. K. Pearce
do.	53	52	C. O. Colley
Chas. Congdon	51	50	J. Moss & Gamble Bro.
Chas. Congreve & Son	49	48	John Askham
E. F. Sanderson & Bro.	47	46	Joseph Ongill
Wm. Jessup & Sons	45	44	John Moulson
do.	43	42	Wm. Sanderson
W. & S. Batcher	41	40	Naylor & Co.
do.	39	38	do
Irving Van Wart & Co.	37	36	Wilson, Hawksworth, Henson & Co.
R. H. Alexander & Barton	35	34	Collins & Co.
Hermann Boker & Co.	33	32	Danascus Steel & Iron Co.
Hilger & Sons	31	30	G. A. Scheidt
Robt. Friedrichs	29	28	Hermann Boker & Co.
Lalanc & Grosjean	27	26	Kings, Drexel & Smith
do.	25	24	Wm. Lind
E. & H. Lamarche	23	22	Edward Behr
Sullivan & Hyatt	21	20	Ray Brothers
do.	19	18	do
Richards & Fleury	17	16	Blodgett, Brown & Co.
Wright & Mice	15	14	Hezekiah King
W. M. Smith	13	12	J. Anderson & Co.
A. L. Hulsted & Son	11	10	Wm. Why & Co.
Bliven & Mead	9	8	Edward Lynes
A. R. Van Nest & Co.	7	6	do
Swift & Seaman	5	4	C. Van Horn
J. T. Smith & Co.	3	2	Hammer Hayes & Co.

John C. Tucker  
3rd Vice Pres.

TABLE A.

Book Assn.  
Wm. H. Appleton Pres.

Prochery Assn.  
James A. Norton Esq.

Leather Assn.  
Jackson S. Schullz Esq.

Chas. E. Archibald  
David Doms Pres.

Pier Cooper Esq.

E F G H I  
GUESTS

Board of Brokers	D	56	Wolf, Dush & Fisher
Wm. H. Neilson Pres.	C	54	do
James T. Brady Esq.	B	52	E. Robbins & Brudh
John S. Giles Esq.	A	50	Bruff, Bro. & Seaver
James S. Day Esq.	49	B. 48	Stark, Stauffer & Co.
J. L. Clark Sec.	47	46	James M. Weed
Colin Bruce Bishop & Co.	45	44	Norton & Jewett
Ingoldsby Hulsted.	43	42	Tufts & Colley
Cornell Bros. & Co.	41	40	Phelps, Beum & Co.
Sherman Brothers	39	38	Sears, Adriaens & Platt
do.	37	36	Maryon Quackbush & Co.
R. T. Mc Coy	35	34	Butterfield & M. Farlane
Saml. Roosevelt & Co.	33	32	Townsend, Van Buren & Co.
Walsh Coulter & Co.	31	30	Baldwin, Hill & Co.
John C. Tucker & Co.	29	28	do
do.	27	26	Churchill, Rogers & Welm.
Mooney, Cohn & Co.	25	24	do
do.	23	22	Pettibone & Dodge
Peter Duxey & Co.	21	20	do
Many, Baldwin & Many	19	18	A. T. Russel
do.	17	16	John A. Newbould
J. Davenport	15	14	Wm. R. Hill
Clark & Scofield	13	12	Smith & Payne
Bogert & Oakley	11	10	John C. Johnson
Willets & Co.	9	8	Belcher & Haviland
Brown & Sprague	7	6	Van Nest & Hayden
Clark & Scofield	5	4	Clark, Wilson & Co.
Russell & Erwin, Mfg Co.	3	2	do
Bliven & Mead			

Charles Bliven  
1st Vice Pres.

TABLE B.

DIAGRAM OF THE TABLES OF THE RECORD ANNUAL

Given at the St. Nicholas Hotel New York on the



President John W. Quincy  
 Clergy Rev. Dr. Vermilye  
 Clergy Rev. Dr. Vinton  
 Pres. Columbia College  
 Chas. King L.L.D.  
 Press Wm. H. Fry Esq.  
 Vice President  
 Edw. J. Corning

K L M N O

BLE



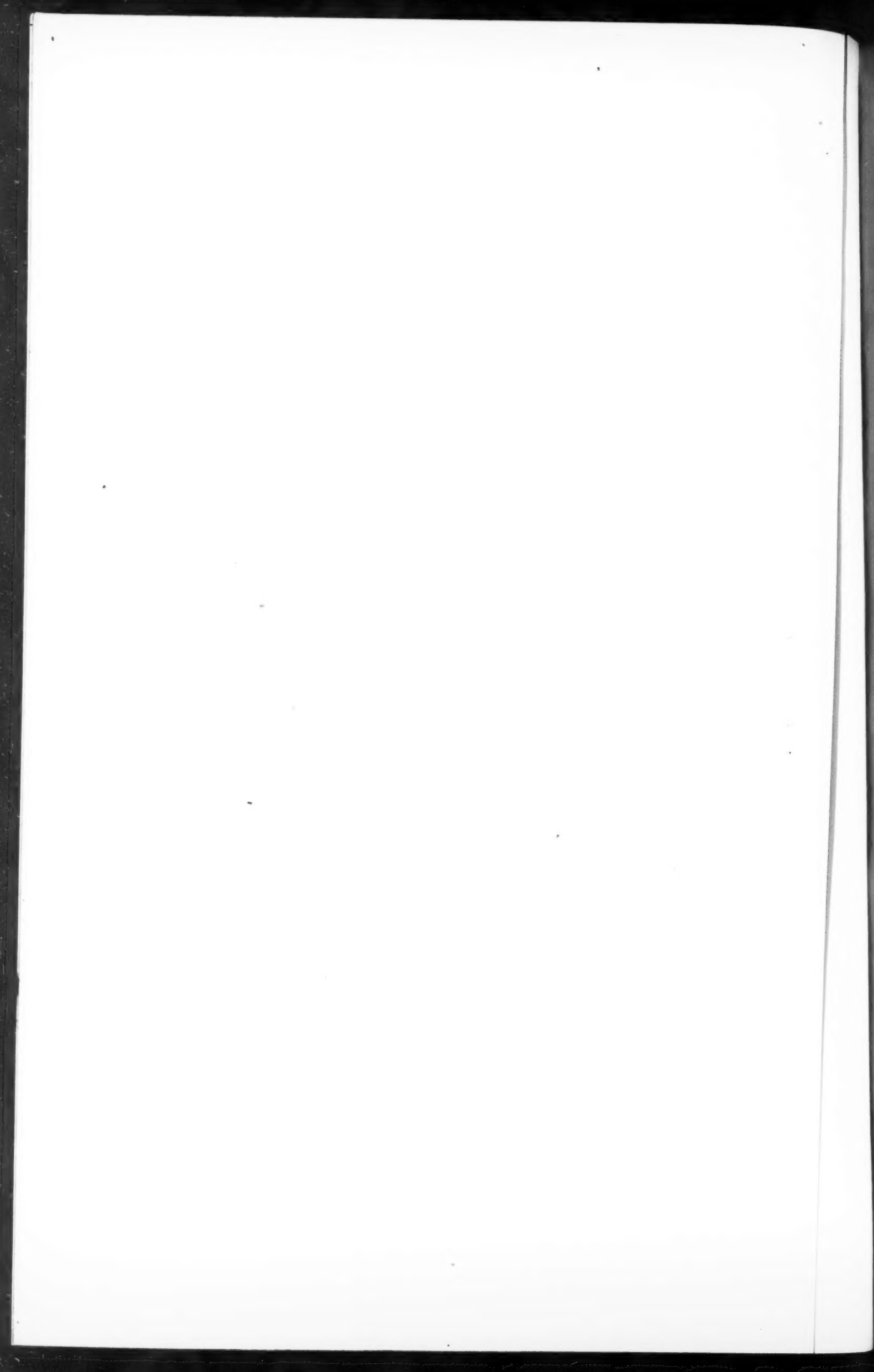
Appleton, Battelle & Co.	57	Q	Cortlandt Palmer Esq.
J.H. Abel & Co.	55	R	Josiah W. Baker Esq.
Holden, Hawley & Co.	53	S	Collector of the Port of NY Augustus Schell Hon.
Wm. Bailey Lang & Co.	51	T	Supt. of the Police Genl. Amos Pillsbury
Parker Mills	49	C	Cooper & Hewitt
Merritt Trimble	47	46	Wetmore & Co.
Lazelle Perkins & Co.	45	44	Pierson & Co.
Tisdale & Bridge	43	42	Smith, Hays, Ann & Co.
do.	41	40	Fuller Lord & Co.
T.B. Coddington & Co.	39	38	do.
Dexter, Smith, Whittemore & Reed	37	36	Win. Borden
Holden, Hawley & Co.	35	34	Bussingfrock & Co.
Marshall Lefferts & Bro.	33	32	J.D. Kingsland & Co.
Pres. Turner & Co.	31	30	do.
Edw. J. Carter & Co.	29	28	John W. Quincy & Co.
Edw. J. Torrey	27	26	Phelps, Dodge & Co.
Lucius Hunt	25	24	do.
Baldwin & Johnson	23	22	Stokes & Bro.
W.N. Seymour & Co.	21	20	N.E. James & Co.
do.	19	18	Bruce & Cook
do.	17	16	Joseph H. Adams
do.	15	14	Churchill, Rogers & Wetmore
Union Porcelain Co.	13	12	Wm. H. Livingston & Co.
do.	11	10	do.
Windle & Co.	9	8	Glee Club
do.	7	6	do.
J. & C. Berrian	5	4	do.
E. Ketchum & Co.	3	2	do.

Rich. J. P. Bruff  
 2nd Vice Pres.  
 TABLE C.

Press	61	D.	60	Press
do.	59	58	do.	
do.	57	56	do.	
do.	55	54	do.	
American Flask Co.	53	52	Thomas Morton	
Wendt & Seymour	51	50	Lamson, Goodnow & Co.	
Peter M. Carter	49	48	do.	
New Haven Arms Co.	47	46	J. Russell & Co.	
Fairbanks & Co.	45	44	S.J. Dennis	
P. & F. Corbin	43	42	Waterbury Brass Agency	
F.E. Howe	41	40	New London Mfg. & B. Works Co.	
Cherith & Pierre	39	38	Scriville Mfg. Co.	
Wm. Belcher	37	36	Tuttle & Bailey	
Walsh & Plume	35	34	Providence Tool Co.	
Clement Howkes & Co.	33	32	American Bull Co.	
John Savery & Son	31	30	A. Horner & Co.	
J.B. Schenck	29	28	Wooster & Brother	
S.B. Bowles	27	26	O'Hannan & Co.	
Henry Lawrence & Sons	25	24	W.F. Shattuck	
Decever & Walker	23	22	S.M. Alford	
Wilbur & Harvey & Co.	21	20	Leonard & Clark	
Osborn & Swain	19	18	Doe & Rice	
E. Crolius	17	16	Burtis & Duntap	
Durrie & Rusher	15	14	John Q. Kellogg & Co.	
C.H. Sheehan & Son	13	12	Bruff, Bro. & Sewer	
Orion & Wheelock	11	10	D.B. Logan	
Conover & Walker	9	8	J.M. Walton & Co.	
W.N. Seymour & Co.	7	6	do.	
do.	5	4	do.	
Wm. S. Murray	3	2	Wm. H. Petit	

A.G. Lee  
 4th Vice Pres.  
 TABLE D.

ANNUAL DINNER OF THE HARDWARE BOARD OF TRADE,  
 Evening of Wednesday January 18<sup>th</sup> 1860 at 6 o'clock.





## NET PRICES.

### From the Manufacturers' Standpoint.

THE ARTICLE in our last issue, giving as it did the views of the leading jobbing houses of the country on the question as to the advisability of a general adoption of net prices, has evidently attracted much attention. We are in receipt of a number of letters from manufacturers and the trade discussing the subject and advising us how the matter appears from their point of view. While, as we stated in our last issue, the majority of the jobbing houses would perhaps prefer, in view of their own interest, an abandonment of lists and discounts and a going back to net prices, it is obvious from the tenor of the letters which we have received from manufacturers that they are disposed to take a different view. The bulk of the communications we have received on the subject have been in opposition to the movement toward net prices, and representing, as these letters do, prominent houses in many different departments of the trade and in widely separated parts of the country, this expression of opinion is significant. Our correspondents are frank to make the point that while for the furtherance of the jobbers' interests a movement toward net prices might, perhaps, be advisable, they fail to see the advantage either to the manufacturer or the retailer, and they point out that the adoption of the net-price system would entail an immensity of labor on the manufacturers in keeping the trade advised as to prices, while at the same time it would make the retailers' task to be so complicated and difficult as to cause them serious embarrassment if they attempted to keep posted at all generally as to market values. But our readers will be enabled to judge of the feeling of the manufacturers from the following copious extracts which we make from letters which have come to hand since our last issue:

A prominent Connecticut concern making a diversified line of goods refers to the question in the following guarded terms:

In a general way it would hardly seem practicable to substitute net prices for everything in Hardware. Where it can be done it would seem to us to be as well.

In the following communication from a manufacturing house in New York State our correspondents argue that the proposed change would fail to accomplish the desired results:

While many advocates of a net price system of selling Hardware assert the belief that it would add to the jobbers' profits they fail to show how the desired effect would be accomplished. If it is de-

sirable on the part of the jobber to facilitate the matter of keeping the retailers thoroughly posted in their prices the net-price system is the plan to accomplish it. Inasmuch as the list and discount system was adopted to correct this feature, we believe, if abolished, many of those now seeking its abandonment would feel dissatisfied thereat and would urge discounts (when buying) from the net prices quoted by the seller. While it is possible that the proposed change would benefit some lines, it would certainly fall far short of being the panacea it is evidently considered by many, which will be apparent to any jobber by comparing profits on many goods that have long been sold at net prices with those of goods sold on the other plan.

The practical difficulty in connection with the quotation of goods is referred to in the following letter from a Boston house:

In making prices the list and discount method is very handy and convenient. We believe it would be impracticable to get up a catalogue with all net prices on account of changes liable to occur, but we think that the trade generally prefer to have net prices quoted to them.

A manufacturer in another line of goods thus emphasizes the increased labor that would be entailed on manufacturers:

We can imagine no substantial reason for the abandonment of lists and discounts and the substitution of net prices. With advancing time and the complications arising on account of the introduction of new and varied goods the necessity exists for curtailment, not unwarrantable enlargement, of work. In our line we would have to run a printing press to keep up with changes and an enormous expense would be imposed with no adequate return. We think lists and discounts have come to stay.

The same point is made in the following communication from a New Jersey house:

In our opinion a general abandonment of lists and discounts and the adoption of net prices for Hardware is not practicable or desirable. While it may be accomplished in some lines of goods, we think it could not be satisfactory in a great majority of articles handled by the Hardware trade. In our line, for instance, we send our catalogues, to thousands of consumers, and a great majority of them buy the goods afterward from the retail Hardware store in their town, and you can readily see that we would be obliged to have two or three different kinds of catalogues with as many different kinds of prices if we were to adopt the net price system. You may put us on record as being against it.

The following careful review of the question comes from a manufacturer making goods in considerable variety, in the sale of which it would be a difficult matter to dispense with list prices:

So far as our own branch of trade is concerned (Screws, Bolts, &c.), we are of the opinion that it would be wholly impracticable to abandon present system of lists and discounts and substitute for them net figures on each article. The variations in cost of material, in cost of labor, and the absolute necessity of distinction between different classes of purchasers, make it imperative that the prices of these goods shall be governed by lists of considerable elasticity, by which we mean the lists should be sufficiently high to provide for all possible variations in the market, it being simply necessary to increase or decrease the discounts to meet the requirements of a certain condition of affairs.

Otherwise it would be necessary to issue new lists for every change in the market, which would be both very expensive and wholly absurd. We are always ready and anxious to take up with and adopt, so far as possible, any change which is in the nature of an improvement upon prevailing methods. But we do not look at the present proposition in that light.

From a leading New England manufacturing concern we have the following letter, in which reference is made, it will be observed, to the effort made some years ago by Western jobbers with a view to giving preference to manufacturers who would quote net prices. The failure of the movement at that time is referred to:

An inspection of our catalogue and wholesale discount sheet will reveal the great difficulty there would be in our quoting net prices. Some eight or ten years ago there was an association of wholesale jobbers in Hardware in the West, who had a circular printed with their names attached, a copy of which was in a conspicuous place in each store, to the effect that they would give the preference to those manufacturers who would quote net prices. They could not live up to it for a single week, and it soon became a very dead letter. As the prices of our goods and those of other manufacturers vary according to cost of material, labor and competition, it is necessary to publish a list price high enough to provide for the fluctuations in the market by giving a higher or lower discount from this list. In our business, if we were obliged to quote net prices to our customers, we think it would take the entire time of a pretty smart man. We emphatically favor lists and discounts and not net prices.

The following brief expression represents the opinion of a leading manufacturer:

In our business the use of net prices would be impracticable.

Referring to Machine Screws, a leading house alludes to the fact that net prices would be impracticable:

It would not be policy to adopt net prices in our business, as there are so many different kinds, sizes, &c., that it would be very expensive and involve a great deal more labor than the system of list and discount. With the use of Ladd's Discount Book we find it about as easy and not any more work to figure our bills with discounts than we should if they were all net prices. We should be very much opposed to the change and do not think it will ever be brought about.

The desirability from the retailers' standpoint of having a discount from a published list is alluded to in the following communication from a Massachusetts manufacturer:

Our impressions are not favorable to abolishing lists and discounts. In order to do a successful business the dealer must realize some margin, and after an experience of more than 30 years we have come to the conclusion that the list price per dozen should be the aggregate of 12 single articles to consumer; thus if it be 25 cents each, it would be \$3 per dozen, from which a retailer wants a certain discount, and the jobber who sells to the retailer a special or additional discount; and it gives confidence to the consumer when a dealer can show him a manufacturer's list made up on basis as above, from which, of course, he expects the trade to have a competent deduction for his part of the transaction.

In the following letter our correspondents, who manufacture Drills, while ex-

pressing the opinion that net prices may in general be desirable, state that it would not be practicable in their line:

We think the general adoption of net prices for Hardware is desirable, but for us it would be impracticable, as we have about 400 items, all of which are sold at varying discounts. We would have to use several separate price-lists where one now answers, and this would lead to great confusion, in our opinion.

The question has apparently not received especial attention from our correspondents whose letter is given below, but their first impressions in regard to the matter are in opposition to the proposed change of method:

We doubt the practicability of a general abandonment of all list prices and discounts, at least as between the manufacturer and jobber. The question is one, however, to which we have not given much thought and possibly on more mature deliberation we might modify our opinion somewhat, although from our present standpoint we think we can see quite serious objections to the adoption of such a plan.

The necessity of making a difference in quotations to jobbers and retailers is alluded to in the following letter from a prominent manufacturer in Connecticut:

We are most certainly not in favor of abandoning lists and discounts and substituting net prices for Hardware, as it is necessary to make a difference between the jobber and retailer in quoting prices, and with a system of net prices it would involve a great deal more labor in making quotations.

The views and methods of manufacturers of a line of goods closely related to Hardware are expressed in the following communication:

We have read the article on net prices with interest. We feel that we are hardly in a position to express an opinion on this matter, as we are not dealers in or manufacturers of Hardware, although our goods are handled to a large extent by the Hardware trade. As will be seen by our discount sheet, it is our custom to quote our hand machines, and also all extras, at a discount from list, whereas all of our horse machines are quoted at a net price. It is customary for us in offering new machines to base the list on a certain percentage of their cost, so that it is a matter of convenience very often to us to sell goods at a list price rather than at a net price, as it makes less clerical work, and we find that a great number of our customers prefer to buy goods at a discount from list rather than at net prices; however, the margins have been so close on some lines of goods that we find it almost a necessity to sell this class of goods, such as Horse Hoes, Cultivators, &c., at a net price. Our present system seems to be the most satisfactory all around to the trade that we can devise at the present time.

One of the leading manufacturers of Bolts in the following careful review of the matter expresses the opinion that the proposed change would be to the advantage of neither the manufacturer or jobber:

We are not of the opinion that the abolition of lists and discounts would benefit the jobbers. These parties frequently use the long price in retailing goods, and the discount allowed by the manufacturer is often the profit of the jobber or retailer. On the other hand, we do not believe that the manufacturer would be benefited by such a change, for with a standard list for

the manufactured article the discounts may be changed on account of a fluctuation in price of raw material, which changes would not disturb the price to the consumer and injure the jobber until the said jobber felt prepared to give the trade the advantage of any decline. In our line the manufacturers have adopted uniform lists for the different grades of goods and discounts are allowed, which we believe are generally satisfactory to jobbers and consumers.

The desirability of not having too large or too complicated discounts is pointed out in the following letter, in which our correspondent also expresses his conviction that it is impossible to adopt net prices:

Many of the discounts on goods are decidedly too large and the list should be changed so that discounts should run not to exceed 25 per cent., but in my opinion, and I have had more than 40 years' experience, it is utterly impossible to adopt net prices. It will not do to let retailers know what jobbers pay for their goods in all cases and manufacturers cannot sell at the same prices to all their customers. The man that buys \$1000 worth of goods can and will buy for less than the man who buys only \$100 worth. The man who pays cash can buy cheaper than the man who don't. I don't think the net prices would last one week. One man would offer to take 2 per cent. off for cash, and another 5 per cent., and so on. The whole thing would be just where it is now.

The advantage of having a stable list is pointed out in the following letter from a well-known manufacturer in another line:

We prefer the list and discount system, and for this reason: The list on our goods, various sizes, is now known the world over, and it simplifies matters to quote a customer a certain discount from standard list. Discounts may vary, but the list remains the fixed standard and is now well understood both by manufacturer, jobber and retailer. We sell some of our lines at net prices, but, all things considered, much prefer the list and discount system.

In some lines the use of net prices has for some time been quite general, as, for example, in Cutlery. Alluding to this department of trade, a well-known manufacturer says:

With reference to prices on goods in our line, it has long since been my practice to quote net prices, working entirely upon maximum and minimum prices, thus distinguishing the jobber from the retailer. I think the old way of high list and large discount has been continued more as a habit than anything else, as all close jobbers buy at a net figure and must arrive at that point in order to fix the price of purchase. I speak of our own particular line. In other manufactured goods it might not work the same.

The fact that net prices do not offer as many opportunities for cutting is a point made in the following letter:

Net prices require a little more work, and the salesman must be better posted, but they do not give as good an opportunity for cutting prices all through the line as list and discount. I think the tendency of net prices is to make prices more stable.

With reference to the whole question we have the following from well-known manufacturers in Ohio, in which they express their preference for net prices and explain the method by which they would, on such goods as Screws, Bolts, &c., dis-

pense with list and discount, and have instead a card with a base rate:

Nothing in your issue of the 14th inst. the discussion on the question of net prices and your invitation to a free discussion, we take the liberty of expressing our opinion on it. We have been in business 12 years, and although having been brought up in a wholesale Hardware house where, as is the rule, all was list and discount, we have always sold our output at net prices, as we considered it the simplest and most labor-saving way. We notice the objection raised by some, as to the chaos it would occasion on goods like Screws, Bolts and other articles of which numerous sizes are made, and would say that these could be listed the same as Merchant Bar Iron—that is, having a "base rate" for the cheapest size, with advances for the other sizes. Thus the prices would always be the same, as the list is now, and the change would be made on the base rate only. It is certainly a great deal of labor to figure the cost of an article from which numerous discounts must be taken to find the actual cost. With the base rate known, you have only to add the advance for a certain size and you have the net price without the usual labor of figuring discounts.

Other manufacturers among the largest and most prominent make the point that with their multiplicity of goods the use of net prices would be impracticable and undesirable. One of them emphasizes the fact that it would be going back to methods which formerly prevailed, but which with the progress of the trade have been abandoned, and, in their judgment, such a thing is not likely to occur. Others refer to the fact that some of their goods are sold regularly by list and discount, but in special cases are sold at net prices to the larger buyers. In connection with this practice they point out that the goods which are sold at net prices are almost invariably sold at narrow margins, and consequently yield the manufacturers less profit. In their opinion, the substitution of net prices for list and discount would have a tendency to reduce the manufacturers' profits, as it would bring the price of each separate article under scrutiny and consideration, and enable the close buyer to attack it by comparing such price with another figure obtained from some other manufacturer. As one of our correspondents remarks, it is easier to hold one's own in quoting a general discount on a line of goods than to refuse a concession of a cent or two in the net price of a single article. This consideration apparently has considerable weight with many manufacturers, whose experience is that their lowest quotations are very often given in the form of net prices. The matter is, however, one that can be looked at from many different points of view, and we shall be glad to hear from others in the trade in regard to the way in which the adoption of net prices would affect their interests. The retailers are perhaps as much interested in this as any, and both manufacturers and merchants will be disposed to defer largely to their judgment in the matter. We, therefore, invite from them, as well as from jobbers and manufacturers, any further light which they may be able to cast on the question.



## William Frankfurth.

SOME WEEKS SINCE we announced the death of William Frankfurth, president of the Wm. Frankfurth Hardware Company, Milwaukee, Wis., which occurred at Vienna, Austria, December 1. In view of his prominence in the trade we present herewith a portrait of Mr. Frankfurth, together with a sketch of his life. Accompanied by his wife and three children Mr. Frankfurth had been traveling for a couple of years on the Continent, the trip having been suggested by the poor health of his children. He had intended to return to Milwaukee in the spring, and was just at the point of starting for Italy when he was attacked with inflammation of the bowels, which caused his death after a few days' illness.

William Frankfurth was born near Cassel, Germany, in 1829. After the revolution in Germany, 1848 and 1849, proved to be a failure, he embarked for America, and settled in Milwaukee in 1849. Some years afterward he found employment in the Hardware business of John Pritzlaff. In 1862 he started a Hardware store, which prospered, and in 1867 took Lorenz Maschauer, his brother-in-law, into partnership, the firm name being William Frankfurth & Co. The trade of the establishment kept on growing and in 1875 the firm enlarged and remodeled the store and engaged in the jobbing business. From that time the trade of the house increased rapidly and in 1885 the Wm. Frankfurth Hardware Company were organized, with William Frankfurth as president; Wm. Jahns, vice president; Edwin Foerster, secretary and treasurer, and Lorenz Maschauer, general manager. The company then established an exclusively wholesale business at 116 and 118 Clybourn street, and their sales have continued to increase until they now amount to almost \$1,000,000 per annum. Mr. Frankfurth leaves two sons and a daughter. He was known as a very just and courteous man and was highly esteemed by all who knew him. His well-balanced judgment made him the arbitrator of many disputes, the decisions in which were accepted usually without murmur. Mr. Frankfurth did not belong to any church, but he was a great helper to any one who needed help. He believed in the words of Benjamin Franklin, "The whole world is my fatherland and do good my religion." He was one of those who

did not let his right hand know what his left hand was doing. Although he never sought public offices he took a very active part in politics and held numerous positions of honor and trust. He served as a director of the Exposition Association, director of German-English Academy, trustee of the Public Museum, and was the first speaker of the Turn Verein of Milwaukee.

From

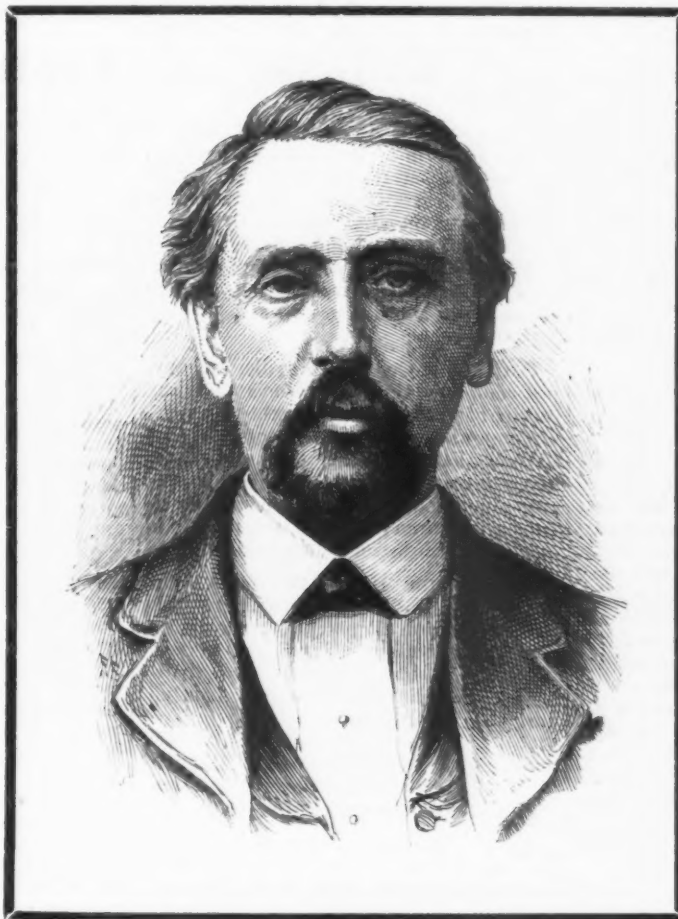
### Our Foreign Representative.

WE ARE in receipt of the following very interesting letter from Polhemus Lyon, which bears date Indian

inland railway freight as well. After all is said the greatest obstacle to American business with the distant English colonies is the poor communication.

Between South Africa and New York there is a weekly mail, via England, occupying about 30 days in transit, but between Australia and New York there is only a monthly mail via San Francisco and taking the same time to deliver. The fact, however, is that almost all business which the colonies transact with "the States" is done through London, the head office of most colonial houses being in London, through whom all orders must go and who finance the business; they are usually represented in the colonies by a

manager, who often is the "Co." of the firm. Even where they are not English firms doing a colonial business, but are really colonial houses, we find that a majority of these are doing business on English capital; the "home" house placing all orders and paying all bills. In traveling from colony to colony around the world, one is struck by the great amount of English capital thus invested and the immense sums some London concerns must have out in this manner. I know of one London house who give a credit of about \$50,000 each to two or three concerns in each South African port, and to several concerns in Australia and New Zealand, getting 6 per cent. on their loan and 2½ to 5 per cent. buying commission. But I began to refer to the poor communication between the English colonies and New York; it takes five months from the time an order is mailed at Cape Town before the



WILLIAM FRANKFURTH.

Ocean, December 8. It will be observed that in it he discusses a number of matters of importance to those interested in the export trade and gives suggestions which are deserving the careful attention of manufacturers and shippers:

INDIAN OCEAN, December 8, 1891.

American manufacturers have a great advantage over European in the careful packing done, insuring the goods opening up in attractive shape. Some European manufacturers have yielded to pressure so far as to retire the paper packages in favor of "cardboard boxes after the American style." Again, our manufacturers do not as a rule charge for cases, while the European manufacturer invariably does, though they gain an advantage in usually delivering f.o.b. vessel, while with us there is often a carting charge, if not an

goods from "the States" are landed at destination.

Sailing vessels only, of about 500 tons, are in the service and these do not average 75 days from port to port; it is claimed, as a joke I trust, that many of these foreign captains, for very few of these vessels are American, haul down their sails at dark and all turn in for a good night's sleep. Anyhow, the vessels seem to get lost for two or three months after leaving New York harbor. There are in all some 4000 tons freight offering for South Africa every month; a line of six steamers carrying 3000 to 3500 tons freight and sailing regularly once a month would insure success and be able to find a full return cargo in India. Steamers making 10 to 11 knots would reach Cape Town in less than 30 days from New York. How

quickly our shipments would grow with such delivery. A similar prospect in England would start a company in no time, but in America, alas! no interest has been taken in this sort of enterprise; exporters however, are comforted in the hope that an awakening has occurred and this great obstacle to extending our foreign trade may yet be materially lessened. It is worthy of note that between Europe and South Africa steam freight has almost entirely displaced sail, the saving in cost being no inducement against the gain in time, except for the most bulky, cheap cargo.

It is exceptional for me to open business with a Colonial that I do not have to combat his statement to the effect that European goods by slow steamer are in his warehouse 75 days after the order is written, while it takes "forever and a day" to get American lines.

Terms of sale with the colonies are usually drafts at 60 days' sight; the European goods may be sold before pay day comes, the American are paid for before they are landed.

The distance from New York to South Africa is hardly greater than from Liverpool, so that with steam communication their advantage would be nullified.

All this certainly bars out a great deal of business, but we are progressing.

POLHEMUS LYON.

### Trade Items.

**WIEBUSCH & HILGER**, 84 and 86 Chambers street, New York, have recently been appointed sole agents for the new American Wrought Horse Shoe Anvil, which is illustrated with some explanation of its special features in their advertisement on another page. They call attention to the fact that the top and bottom are each one solid piece and welded at waist, and that the steel faces are all put on in one solid piece. The same house have also been appointed sole agents of W. A. Shull, Philadelphia, successor to Fults & Shull, manufacturers of Horsetail Razor Strops. William Rose & Bros. have also appointed them selling agents, and they are thus in a position to offer this well-known line of Trowels and Tools.

**GEORGE H. ISMON**, 261 Broadway, New York, Eastern sales agent of the Salem Wire Nail Company, visited Chicago last week and was heartily welcomed by his friends and business acquaintances, who have pleasant recollections of Mr. Ismon as a former Chicagoan.

**WILLIAM H. HOWELL**, who was for many years with the well known Hardware house of Lloyd, Supplee & Walton, has assumed an important position in the office of Fayette R. Plumb, of the Frankford Edge Tool Works, Philadelphia. Mr. Howell entered upon his duties with the commencement of the new year, and will doubtless be a valuable acquisition in his new and enlarged sphere.

**THE AMERICAN CUTLERY COMPANY** of Chicago suffered a loss by fire in a portion of the factory and dryroom on the 11th inst. They expect to be in running order again before the close of the month. The stockroom was not damaged, and with the exception of some few numbers which have been exhausted, the company can fill orders as usual.

**C. I. MARKHAM**, who for the past ten years has been connected with E. C. Stearns & Co., Syracuse, N. Y., resigned

his position the first of the year to accept the management of Van Wagoner & Williams Company's Cleveland works. Mr. Markham represented E. C. Stearns & Co. west of St. Louis for five years and is well and favorably known throughout that territory. He is temporarily in New York preparing to move to Cleveland, which he intends making his permanent home.

**SURPLESS, DUNN & ALDER**, 97 Chambers street, New York, have been appointed agents for the Marietta Mfg. Company, Marietta, Pa., who are successors to Columbia Agricultural Works. They are calling special attention to their line of Hose Reels, to the advantages of which they allude.

**THE STOCKHOLDERS** of the Branford Lock Works held their annual election of officers on the 18th. inst., resulting as follows: John J. Kennedy, president; E. F. Jones, secretary and treasurer. Board of Directors, John J. Kennedy, E. F. Jones, J. W. Townsend, C. E. Lewis, president of Farrel Foundry and Machine Company, and Alfred D. Clinch, of Underhill, Clinch & Co., New York City.

**AT THE MARRIAGE** of Miss Walkley to George L. Irvin of Baltimore, last Thursday evening, at the house of the bride's father, W. R. Walkley, in Brooklyn, there was a large gathering of persons well known in social and business circles, and among them were many representatives of prominent Hardware houses. The occasion was a brilliant one and very enjoyable.

**PACKARD & Co.** of Greenville, Pa., have just completed their Thirty-seventh annual invoice of stock and find that the past year's business was entirely satisfactory. We are advised that preliminary steps are being taken to merge the firm into a stock company, in which the original members will remain as formerly, while several of the employees will become stockholders.

**THE PALMER HARDWARE MFG. COMPANY**, Troy, N. Y., announce that they have purchased all patents, trade-marks, machinery, tools and appliances pertaining to the business heretofore conducted by the Thompson Mfg. Company, Lansingburg, N. Y. It is accordingly requested that all orders for Sunshine Shoe Sets, Sunshine Polishers, Sunshine Daubers, T. M. C. Daubers and Clean Box Blacking shall hereafter be sent to them.

**H. C. WHITCHER** of Detroit, Mich., has recently made some changes in the lines he represents, and now handles the goods of the Whitaker Iron Company, Baackes Wire Nail Company, Belmont Nail Company, Lindsay & McCutcheon, Champion Safety Lock Company, Cleveland Barb Fence Company, Chapin Bolt and Nut Company and Cleveland Stamped Elbow Company. He reports a very satisfactory business.

**ARTHUR EMMONS**, formerly with M. R. Manhard, and latterly with the Manhard Hardware Company, Marquette, Mich., will, in connection with his brother, open a new Hardware store in that place about February 1. The business will be conducted under the style of the Emmons Brothers Hardware Company. The company have secured an attractive and convenient store room, the depth of which is 90 feet. The proprietors of the store have been identified with the Hardware business since they were boys, and are referred to as honest and enterprising young men.

**S. L. LAING**, who has represented the Simmons Hardware Company, St. Louis, for ten years in Iowa, with headquarters at Cedar Rapids, is now representing the company in western Washington and western Oregon, with headquarters at Tacoma, Wash. The company refer to

Mr. Laing as a thoroughly well posted Hardwareman and one who enjoys their entire confidence, and have selected him to cover the above territory, assured that he will represent them efficiently.

**CHARLES E. CARPENTER**, manufacturers' agent and commission merchant in Hardware, 91 Chambers street, New York, announces, January 2, that he has associated with him in business Frederick C. Bayles, under the firm name of Carpenter & Bayles.

**THE DEATH** IS ANNOUNCED OF H. T. Buchanan, manufacturer of Screen Doors and Windows, Hillsdale, Mich., on December 29. The business will be carried on as heretofore, and all contracts made by him will be fulfilled.

**CHAS. C. CLUFF**, as manufacturers' agent for export, 84 Broad street, New York, is selling Horse Nails, Horse Shoes, Sisal and Manila Rope, Twines, Staples, Spiral Tubes, Wire Nails, Wood-Working Machinery, &c.

### Price-Lists, Circulars, &c.

**CHISHOLM STEEL SHOVEL WORKS**, Wm. Chisholm & Sons, proprietors, Cleveland, Ohio: Steel Shovels, Spades and Scoops. They advise the trade in a circular accompanying their catalogue that in deference to the views of very many of their patrons list prices are omitted, and net prices will be quoted on application for such goods as are desired, taking the place of the former lists and discounts.

**THE ELECTRIC GAS LIGHTING COMPANY**, Boston, Mass.: Electrical house, hotel, church, theater and office furnishings, sole manufacturing agents for the United States of Samson French Battery, also general Electrical Goods. Their catalogue contains 72 pages, fully illustrated, with prices of a large and varied line of these goods.

**WELLS BROS. & Co.**, Greenfield, Mass.: Screw-Cutting Tools and Machinery, among which Little Giant Screw Plates, Taps, Reamers, Bolt Cutters, &c., are prominent. Their catalogue gives a full and enlarged description of their labor-saving Tools and Machinery, a copy of which they desire to place in the hands of every Hardware dealer, machine shop, blacksmith, and carriage maker in the country.

**HENRY DISSTON & SONS**, Philadelphia, Pa.: Pamphlets, entitled "A Few Opinions from North, South, East and West," and "Aluminum Steel Band Saws." These are devoted to testimonials from persons using Circular and Band Saws made by this firm.

**JOS. DIXON CRUCIBLE COMPANY**, Jersey City, N. J., and 68 Reade street, New York: Illustrated catalogue of Graphite Productions. Particular attention is directed to Dixon's American Graphite Pencils, of which they manufacture over 500 styles, including those suitable for artists, schools, architects, draftsmen and counting rooms. They are made in ten degrees of hardness of leads, so that the requirements of all classes of work may be successfully met, as well as personal likes.

**THE WRIGHT & COLTON MFG. COMPANY**, Worcester, Mass.: Wire, Wire Cloth, Netting and Fencing, Wire Lathing, Wire Work and Standard Wire Goods. Their 1892 catalogue, No. 16, of 72 pages, contains nearly 200 illustrations, descriptions and lists of their goods. They have made many improvements in machinery and in the qualities of their goods, including their new process Hard Steel Wire Netting. Their factory facilities have been increased and new machinery added. Special attention is called to their Poultry Netting, Galvanized Wire Cloth and Wire Lathing. They are now carrying, we are advised, a large and complete stock of all meshes of Twisted Netting and



Fencing, from 1/4 inch up; and all grades, widths and meshes of Galvanized and Iron Wire Cloths, which, with their shipping facilities, they are able to furnish promptly.

THE TOLEDO BOLT AND NUT COMPANY, Toledo, Ohio: C. C. C. Improved Gimlet-Pointed Coach Screws, Bolts, Nuts, &c. Lists are given of Common Carriage Bolts, Machine Bolts with Square Heads and Nuts, Gimlet Pointed Coach Screws, Bolt Ends, Hot-Pressed and Forged Square Nuts, Hot-Pressed Hexagon Nuts, together with tabulated matter referring to these goods. A prominent feature of the catalogue are the sterling lists of common Carriage Bolts, Machine Bolts with Square Heads and Nuts, and Gimlet-Pointed Coach Screws, which are serviceable in their export business.

E. S. & F. BATEMAN, Grenloch, N. J.: Iron Age Farm and Garden Implements. The line includes Cultivators, Horse Hoes, Combined Harrow and Cultivator, Riding Cultivators, Gang Plows, Fertilizer Drills, Flexible Harrows, Cultivator

illustrated a few representative articles, suggesting some of the lines carried by them in stock. In various places are mentioned some of the special catalogues which they have issued from time to time, any of which will be mailed upon application to them. The book is compact in form and is designed as an aid to memory and a valuable memorandum of wants.

It is Reported—

That the Implement firm of Smith & Co., Wellington, Kan., composed of R. J. Smith and George Gooding, has been dissolved, Mr. Gooding retiring from the firm.

That Van Voorhis & McNair, Hot Springs, S. D., will remove their stock of Hardware to Chadron, where they will open a store.

That E. Soulligne, Kankakee, Ill., formerly with W. W. Todd, is putting up a

That the Hardware firm of Gray & Church, Frankfort, Ky., has been dissolved. Lee Church has retired and M. P. Gray will conduct the business.

That Odell & Peterson, dealers in Hardware, Council Bluffs, Iowa., have been succeeded by Peterson & Shoening.

That George W. Ruhl has purchased John S. Ruhl's interest in the Hardware store of Ruhl Bros., Findlay, Ohio.



That B. F. Fink of Huntington, Pa., has purchased J. M. Laird's Hardware store at Orbisonia, Pa.

That G. A. Scofield's Hardware store at Cherry Valley, N. Y., was slightly damaged by fire on the 7th inst.

That William Neel of Bowling Green, Ky., has gone into the Hardware business at Princeton, Ky.

That F. G. Russell, Hardware merchant at Hastings, Ark., is about to take possession of his new store.

That the election of officers of the E. L. Wilson Hardware Company, Beaumont,

JANUARY.								
	SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.	
	24	25	26	27	28	29	30	
QUAN- TITY		DESCRIPTION OF GOODS						PRICE

Want Book.

Points and Steels, Combined Barrel Truck and Hand Cart, Pruning Shears, Trowels, &c.

WAGNER MFG. COMPANY, Sidney, Ohio: High grade of extra finished and nickel-plated Hollow Ware. Their catalogue shows a full line of Hollow Ware, which is furnished polished or nickel plated. The name Wagner is cast on every piece, which is an indication of the genuineness of the article. Price-list of Sugar Kettles, Mauls, Sash Weights, Ventilator Grates, &c., will be mailed by them upon application.

NEW BRITAIN HARDWARE MFG. COMPANY, New Britain, Conn.: Standard Machine Screws, Special Machine Screws, Studs, Washers, &c. Illustrations and list prices are given of Iron Set Screws, Steel Set Screws, Hexagon Head Cap Screws, Square Head Cap Screws, Round Fill Head Cap Screws, Flat and Button Head Cap Screws, Collar Screws, Milled Iron Studs, Planer Head Bolts, Boiler Patch Bolts, &c. Discounts are named from regular list on Standard Machine Screws in full packages. Special goods are made at special prices.

Want Book.

HIBBARD, SPENCER, BARTLETT & CO., Chicago, are furnishing their customers with an attractively bound Want Book for 1892. The right-hand pages throughout the book are ruled, with headings for the month, as shown in the accompanying illustration. These headings are so dated as to allow seven days for each page. On the opposite pages are

Hardware store, 24 x 40 feet. The establishment will be ready for occupancy, it is expected, about March 1.

That L. B. Passman, dealer in Hardware, Elizabeth, N. J., is taking possession of his new store.

That L. H. Cary has recently opened a new Hardware store at Seneca Falls, N. Y.

That A. B. Rathbone's Hardware store at Batavia, N. Y., was robbed of a small amount of Knives and Plated Ware on the 9th inst.

That C. B. Dexter, Bangor, Maine, will enter the Hardware business.

That the Calgary Hardware Company, Calgary, N. W. Ter., are moving into their new premises. The building is of stone, fitted up with all the modern improvements. The counters and shelves are all of native woods, from British Columbia and Alberta.

That Mr. Clark of Chicago is building a 40 x 80 Hardware and Implement house at Tecumseh, Okla.

That S. L. Marshall has recently commenced the Implement business at Ipava, Ill.

That J. E. Pollock, dealer in Hardware at Greenup, Ky., has disposed of his business to a new firm under the style of Biggs & Lawson.

That R. B. Owens & Sons, Detroit, Mich., have recently commenced the retailing of Builders' Hardware in that city.

That E. C. Carroll's Hardware store at Clarksville, Mo., was burned to the ground on the 11th inst.

Texas, took place on the 5th inst., the following gentlemen being elected: E. L. Wilson, president; L. J. Kopke, vice-president, and J. W. Campbell, secretary and treasurer.

That L. J. Herrick's Hardware establishment at Wapello, Iowa, was destroyed by fire on the 6th inst. Loss, \$3000; insurance, \$1500.

That the Hardware firm of Worcester & Blatchley, Whitehall, Ill., have been dissolved. The business will be continued by Worcester & Gardiner.

That Elmer D. and Nathaniel Bennett have commenced the Hardware business at Sanford, Me.

That James and Albert West intend opening a Hardware and Stove store at Marion, N. Y., in a few weeks.

That J. E. Scofield, Morris, N. Y., has sold his stock of Hardware to Wm. Sanderson.

That E. B. French's new Hardware store at Middleport, N. Y., is nearing completion.

That J. B. Clifton, Hardware merchant, Pilot Point, Texas, has sold out his business to B. M. Evans.

That D. R. Fones, Conway, Ark., has disposed of his Hardware store to G. W. Donaghey.

That the Hardware store of Lewis & Marshall at Fort Scott, Kan., was destroyed by fire a week or two ago.

P. H. ROBBINS, Chester Depot, Vt., issues an 1892 calendar showing his picture, underneath which are the calendar sheets. Above and on either side of the picture are lists of the goods carried by him in stock.

Calendars.

**THE STANDARD TOOL COMPANY,** Cleveland, Ohio, issue calendar leaves attached to a card, for hanging. On the card are tables of useful information, showing sizes of Twist Drills from  $\frac{1}{16}$  inch to No. 80, with decimal equivalents, the different sizes of Drills that should be used when a full thread is to be tapped, speed of Drills as applied to Steel, Iron or Brass in its normal condition, &c.

**JOHN W. S. PIERSON & Co.,** Stanton, Mich., sends an engraved card of water, trees and flowers, attractively combined, under which is a list of goods carried in stock by him. The calendar leaves for 1892 are attached to the lower part of the card.

**WM. STAIRS, SON & MORROW,** Halifax, N. S.: An 1892 calendar, showing the Halifax old town clock, built in 1796, and calling attention to heavy and shelf Hardware, Fishing Materials and Vessels' Outfits, which they carry in stock. The calendar sheets, which are attached to the bottom of the card, are 18 x 12 inches.

**KILMER MFG. COMPANY,** Newburg, N. Y., in an artistic calendar for 1892 direct the attention of the trade to their Arrow and Adjustable Bale Ties, Steel Wire Rods, Wire Nails, Coiled Steel Wire, Ornamental Fencing, Plain or Barbed Fencing, Wire Staples, &c. The various sheets contain illustrations of these goods each sheet giving prominence to different articles.

**SHULTZ BELTING COMPANY,** St. Louis, Mo., send a metallic end hanger bright in colors, with 1892 calendar sheets attached to the lower part. The hanger calls attention to their various products, but especially to Sable Rawhide Belting and Woven Leather Link Belting.

Australian Mails.

**HENRY W. PEABODY & CO.,** 70 Kilby street, Boston, and 58 New street, New York, issue a convenient card giving the following information in regard

OUTWARD. 1892 HOMEWARD.

Leave New York.	Leave San Francisco.	Arrive Auckland.	Arrive Sidney.	Leave Sydney.	Leave Auckland.	Arrive San Francisco.	Arrive New York.
Jan. 1	Jan. 7	Jan. 28	Feb. 2	Dec 28, '91	Jan. 2	Jan. 21	Jan. 26
Jan. 29	Feb. 4	Feb. 25	Mar. 1	Jan. 25	Jan. 30	Feb. 18	Feb. 23
Feb. 26	Mar. 3	Mar. 24	Mar. 29	Feb. 22	Feb. 27	Mar. 17	Mar. 22
Mar. 25	Mar. 31	Apr. 21	Apr. 26	Mar. 21	Mar. 26	Apr. 14	Apr. 19
Apr. 22	Apr. 28	May 19	May 24	Mar. 18	Apr. 23	May 12	May 17
May 20	May 26	June 16	June 21	May 16	May 21	June 9	June 14
June 17	June 23	July 14	July 19	June 13	June 18	July 7	July 12
July 15	July 21	Aug. 11	Aug. 16	July 11	July 16	Aug. 4	Aug. 9
Aug. 12	Aug. 18	Sep. 8	Sep. 13	Aug. 8	Aug. 13	Sep. 1	Sep. 6
Sep. 9	Sep. 15	Oct. 6	Oct. 11	Sep. 5	Sep. 10	Sep. 29	Oct. 4
Oct. 7	Oct. 13	Nov. 3	Nov. 8	Oct. 3	Oct. 8	Oct. 27	Nov. 1
Nov. 4	Nov. 10	Dec. 1	Dec. 6	Oct. 31	Nov. 5	Nov. 24	Nov. 29
Dec. 2	Dec. 8	Dec. 29	Jan. 3, '93	Nov. 28	Dec. 3	Dec. 22	Dec. 27

to communication by mail with Australia and New Zealand.

Exports.

SUPPLEMENTARY SHIPMENTS, PER SHIP ELLESMERE, JANUARY 6, 1892, FOR MELBOURNE, AUSTRALIA.

By **H. W. Peabody & Co.**—2 packages Silver-Plated Ware, 71 packages Hardware, 4 cases Wringers, 140 cases Hardware, 160 reels Barb Wire, 25 cases Nails and Tacks, 1 case Guns, 1 case Hardware, 3 packages Hardware, 1 case Lampware, 2 cases Bolts, 57 cases Tools, 89 packages Hardware, 45 cases Hardware.  
By **W. K. Freeman**—150 cases Lanterns, 4 cases Hardware, 2 cases Lamp Goods, 6 cases Cartridges and Shells.  
By **Strong & Trowbridge**—1 case Hammers, 2 cases Hardware, 4 cases Hatchets and Axes, 1 case Saw Sets, 1 case Shears, 5 cases

Bush Hooks, 4 cases Hatchets, 1 case Hardware, 79 cases Axes, 1 case Hardware, 1 case Locks, 2 cases Wrenches, 1 case Traps, &c., 2 cases Glazier Points, 1 case Rivets, 2 crates Stone, 2 cases Hammers, 1 case Locks, 2 cases Hardware, 2 cases Emery Wheels.

By **R. W. Forbes & Son**—1 case Tricycles, 2 cases Garnet Paper, 3 packages Drills, 1 case Granite Ware, 1 package Revolvers, 3 cases Lampware, 1 case Mangles, 5 packages Hardware, 18 packages Hardware.

By **R. W. Cameron & Co.**—1 case Rivets, 10 boxes Bolts, 2 boxes Hardware.

By **W. H. Crossman & Bro.**—6 cases Wrenches, 1 barrel Lamp Goods, 2 cases Sifters, 1 case Pump Parts, 1 case Wrenches, 7 cases Hardware, 7 packages Lawn Mowers, 1 case Egg Beaters, 1 case Carlines, 1 case Cartridges, 76 cases Axes, 6 packages Lamp Goods, 10 packages Hardware, 1 case Wrenches, 1 case Hatchets, 30 packages Hardware, 2 cases Coffee Mills, 30 cases Axes, 2 cases Hammers, 2 cases Hardware, 1 case Wrenches, 19 packages Stocks and Dies, 18 cases Pump Parts.

PER BARK CRESCENT, JANUARY 11, 1892, FOR LITTLETON, NEW ZEALAND.

By **H. W. Peabody & Co.**—3 packages Lampware, 11 packages Hardware, 9 packages Hardware, 1 case Carpet Sweepers, 3 packages Hardware, 9 cases Horse Nails, 2 hogsheads Pumps, 4 packages Hardware, 3 cases Agate Ware, 4 cases Hardware, 6 cases Wringers, 1 case Granite Ware, 40 packages Hardware, 2 packages Lampware, 1 case Nails, 1 package Cordage, 8 cases Wringers.

By **Alfred Field & Co.**—3 cases Drills, 1 case Clamps.

By **R. W. Cameron & Co.**—1 case Die Stocks, 10 cases Axes and Hatchets.

By **W. H. Crossman & Bro.**—2 hogsheads Pumps.

By **R. W. Forbes & Son**—2 cases Stamped Ware, 6 cases Hardware, 16 cases Axes and Tools, 9 cases Horse Nails, 2 cases Axes and Hammers, 9 boxes Scales, 5 packages Pumps, 19 cases and 6 packages Hardware.

By **Edward Miller & Co.**—15 packages Lamp Goods.

By **H. W. Peabody & Co.**—1 case Pumps.

FOR OAKLAND.

By **Arnold, Cheney & Co.**—2 packages Pumps.

By **W. H. Crossman & Bro.**—48 dozen Sad Irons.

By **The F. B. Wheeler Company**—4 cases Pumps, 1 case Hardware, 1 bale Cordage.

By **H. W. Peabody & Co.**—2 crates Shellers, 1 case Hardware, 2 packages Pumps, 6 crates Shellers, 16 crates Farming Imple-

ments, 10 packages Hardware, 22 packages Lawn Mowers, 3 cases Wringers, 40 cases Tools, 26 cases Hardware, 2 cases Wringers, 20 packages Lawn Mowers, 1 case Farming Implements.

PER BARK HARRIET S. JACKSON, JANUARY 12, 1892, FOR EAST LONDON, SOUTH AFRICA.

By **W. H. Crossman & Bro.**—232 packages Hardware, 206 packages Agricultural Implements, 105 kegs of Nails, 50 coils Sisal Rope.

**DAME, STODDARD & KENDALL,** Boston, Mass., Fine Fishing Tackle, send us an artistic catalogue of 70 pages presenting a complete line of Fishing Tackle, Jack and Fishing Lamps, Wading Leggings, Pants and Boots, Pocket Flasks, Hammocks, &c. Illustrations are given of these goods, accompanied by descriptions and prices.

Paints and Colors.

*It should be understood that the prices quoted in this column are strictly those current in the wholesale market, and that higher prices are paid for retail lots. The quality of goods frequently necessitates a considerable range of prices.*

The foremost feature in the Paint trade at present is the recent announcement of the introduction of a line of Colors by the National Lead Company, and a movement on the part of Color manufacturers and grinders to form a national organization of their trades for mutual welfare. In connection with the latter, it may be mentioned that the project is in the hands of a committee and has not passed the embryo stage, so that whether the proposed organization is in any manner prompted by the innovation of the Lead corrodors remains to be seen. It is the fact, however, that in engaging in the manufacture of Colors the corrodors have aroused something more than the displeasure of the grinders, and that many of the Color makers have the sympathy of the latter. As a matter of fact, there seems to be a growing impression that the corrodors will eventually engage in the manufacture of ready mixed Paints. The officials of the Lead Company are free to admit that they will adopt any practical measures calculated to increase the sale of their chief productions, and, in connection with the fact that that interest has endeavored to secure control of the Oxide Zinc plant in this country, the admission is looked upon as suggestive. Thus far the corrodors have the advantage of taking the initiative in the contest (if there is to be one), and are hard at work. The following circular has been sent out from all the branches of the Lead Company:

"We solicit your orders for the National Lead Company's Pure White Lead Tinting Colors, which are prepared for the purpose of readily and uniformly tinting Pure White Lead to any desired shade, and for this purpose will readily commend themselves to the painter and consumer as the best, most convenient and cheapest method of obtaining pure Paint in different colors. Colors to produce 30 desirable shades have been prepared and are put up in cans containing 1 lb net of each tinting Color.

"Pamphlet containing sample shades and giving full directions for mixing, comparative cost, &c., will be mailed upon application.

We quote the tinting Colors at 14¢ per can, 60 days, or 2½% discount for cash if paid in 15 days from date of invoice; and will be pleased to receive your orders."

**White Lead.**—The reduced card rate issued by Wetherill & Brother, Philadelphia, has been withdrawn, and that firm have since adopted the National Lead Company's list, which is as follows:

**White Lead, Dry or in Oil, Red Lead or Litharge in Kegs.**

In lots of less than 500 lb, 7½¢ net.  
In lots of 500 lb to 5 tons, at one purchase, 7¢.

In lots of 5 tons to 12 tons, at one purchase, 6½¢.

In lots of 12 tons and over, at one purchase, 6¼¢.

Red Lead and Litharge, in barrels and half barrels, ½¢ per lb less than price in kegs.

Dry White Lead, in barrels, ½¢ per lb less than price in kegs.

White Lead, in 12½-lb tin pails (packed in 100-lb cases), 1¢ per lb over price in kegs.

White Lead, in 25-lb and 50-lb tin pails (packed in 100-lb or 200-lb cases), ½¢ per lb over price in kegs.

White Lead, assorted, in 1-lb, 2-lb, 3-lb and 5-lb cans (packed in 100-lb cases), 2½¢ per lb over price in kegs.

**Terms:** On lots of 500 lb and over, 60 days, or 2½% discount for cash if paid in 15 days from date of invoice. Referring to the situation in Philadelphia, Wetherill &



Brother write as follows: "Conditions warranted our issuing a price card on January 1 that was  $\frac{1}{2}$ ¢ below the card of other corrodors, and the conservatism and wisdom of the representative of their interests, recognizing the reasonableness of our action, maintained their card until our ends were attained, when a revision of our prices brought them, as now, to accord with that of all corrodors of White Lead by the favorite Dutch process."

Some small corrodors who have followed an independent course all along are selling at under the combine prices, but their output, it is claimed, is too small to have any bearing upon the general market. The Omaha Company (independent) have made some efforts to secure business in Eastern territory, but the competition thus far has not been sufficient in this quarter to carry any weight and the management, to all accounts, have more than child's play in caring for trade nearer home. Among local corrodors the report is general that orders thus far this month are ahead of those that had been secured up to the corresponding date last year, and the outlook is represented as being promising. Orders for the better class of mixed Leads are running very fairly also, although prices are irregular, but varieties that have been tried and found wanting for house-painting purposes find slow sale.

**Zincs.**—There has been no change in the condition of the market for American Oxide. Orders are coming along rather unevenly at present, but the volume of business still makes a good showing, and there are no evidences of anything in the nature of friction among manufacturers calculated to disturb values. The market for imported Zinc also remains unchanged, and the only new feature is orders have increased somewhat of late.

**Colors.**—The entry of the National Lead Company as a seller has the effect of creating some stir in the market for Oil Colors, but thus far the innovation has not had time to display its weight, and whether regular manufacturers will find it necessary to modify prices in order to hold trade is very uncertain. In Dry Colors nothing has transpired to change the appearance of the general market to any perceptible extent. A larger business could doubtless be handled without unusual effort, yet there seems to be enough doing to keep prices quite steady nearly all through the list. In fact, there is really no irregularity, except, perhaps, on goods of inferior quality.

**Chalk, Whiting, &c.**—The condition of the market for these goods remains the same as it was last week, with prices ruling steady. Putty is also without decided change.

### Oils and Turpentine.

The movement in all lines of Animal and Vegetable Oils has been chiefly of routine character and nothing has come to the surface in the way of new demand or offering suggestive of inclination on the part of buyers or sellers to depart from the conservative policy that has characterized their movements since the beginning of the year. Vague intimations are given out that negotiations in the direction of forming a Western Linseed Oil combination are under way, but these have no effect upon the market. The comparatively heavy production of refined Cotton Oil in the South keeps the margin of difference in price of that and the crude article very narrow, but has little or no effect upon the distribution of either in this quarter. Nothing new bearing upon the Lard Oil market has come to the surface and in connection with Fish Oils there is nothing to say except that the association have decided to place the sale of their product the coming season in the hands of the agency through which last year's output was distributed.

**Linseed Oil.**—City crushers report only a moderate increase in the sale of their Oil, but hold prices steadily at 37¢ for domestic seed product and 56¢ for that manufactured from Calcutta seed. Western brands are not offered with any noticeable pressure and there seems to be some doubt that purchases can be duplicated at the extremely low prices said to have been accepted early in the month. For that matter, the accuracy of recent reports that sales were made a short time ago at a parity of less than 34¢ here, is questioned. At present sellers quote 35¢ @ 36¢, and manifest a degree of firmness, suggesting that the rumors of a change for the better in the situation of affairs in the West are not wholly without foundation.

**Cotton-Seed Oils.**—Transactions in crude Oil have been on a moderate scale the past week and chiefly at unchanged prices. One or two parcels were reported at a slight concession but the trades are understood to have been made under exceptional circumstances and reflect no real change in the market. Although the output of refined Oil in the South is heavier this season than ever before, the quantity seeking outlet at Northern ports shows no perceptible increase, still receipts are sufficient to meet all demand that reaches this market, and the crude and the refined products continue to sell at remarkably narrow margin of difference in price. The bulk of business the past week has been at prices on the basis of 26¢ for prime crude and 29 $\frac{1}{2}$ ¢ @ 30¢ for prime Summer Yellow.

**Lard Oil.**—No changes have taken place in prices of either city or out-of-town brands and the market remains quite firm in the absence of any radical turn in cost of raw material. Business continues fair, without, however, anything noticeable in the way of unusual individual purchases.

**Miscellaneous.**—Fish Oils of all descriptions are steady at the prices that have ruled for several weeks and the market remains without really new feature. Olive, Coconut and Palm Oils are without decided change in value and continue to meet with very fair sale.

**Spirits Turpentine.**—The improved demand that set in last week has continued, and the volume of business is now well up to the average for the season. Prices are steady at a slight advance, 34¢ having been paid for regular and 34 $\frac{1}{2}$ ¢ for machine barrels.

## Imports.

### Hardware, Machinery, &c.

Boettger & Hinze, Machinery, cs., 8  
Black & Baar, Machinery, pgs., 15  
Botany Worsted Mills, Mach'y, cs., 30  
Blumenthal, A. & F. & Co., Mach'y, pgs., 82  
Boker, Hermann & Co., Gun Stocks, bags and cs., 8  
Chelsea Jute Mill, Mach'y, pgs., 24  
Dieckerhoff, Raffloer & Co., Ironware, cs., 6  
Edison Phono. Co., Mach'y, cs., 6  
Falk, J. E., Mach'y, cs., 16  
Fournier & Knopf, Mach'y, cks. and cs., 5  
Gonzenback, A., Mach'y, cks., 18  
Hartley & Graham, from San Francisco, Old Guns, cs., 748  
James, Emile, Sewing Machines, cs., 77  
Judd, H. L. & Co., Hdw., cs., 31  
Knauth, Nachod & Co., Mach'y Parts, cs., 9  
Korthage, Charles, Mach'y Parts, cs., 3  
Leachorn & R., Mach'y, cs., 2  
Martin, Robert, Mach'y, cs., 9  
Pariser, B., Ironware, cs., 3  
Pilditch, F. S., Hdw., cs., 5  
Pim, Forwood & Co., Hdw., cks., 43  
Sacks & Richmond, Nails, cks., 18  
Ward, Jas. E. & Co., Mach'y, pgs. and pcs., 34;  
Arms, pgs., 13  
Wiebusch & Hilger, Hdw., pgs., 5  
Williams, R., Arms, cs., 3  
Order.—Hdw., cks., 54; Sad Irons, cks., 15;  
Stoves, 143; Ovens, 200; Covers, 200; Mach'y, cs., 7; Hdw., cs., 20

In an interview published in the Duluth *Daily News* Joseph Parkes has printed a strong indorsement of the York beam mill.

## Coal Market.

The wholesale Anthracite Coal trade continues in the same unsatisfactory state noted a week ago, this description being plenty, with the market in buyers' favor. Prices are nominal, notwithstanding production has been much interrupted by heavy rains, which have flooded collieries in several instances, and labor has been shortened by grip. Pea and Buckwheat sizes are scarce.

The Bureau of Anthracite Coal Statistics furnishes the following statement of shipments of Anthracite Coal (approximated) for the month ending December 31, 1891, compared with the corresponding period last year:

	1891. Tons.	1890. Tons.
Wyoming.....	1,085,041	1,672,748
Lehigh.....	581,389	487,210
Schuylkill.....	1,121,540	905,249
Totals.....	3,587,971	3,065,208

For the year ending December 31:

	1891.	1890.
Wyoming.....	21,325,239	18,657,694
Lehigh.....	6,381,838	6,320,658
Schuylkill.....	12,741,358	10,867,821
Totals.....	40,448,336	35,855,174

The stock of Coal on hand at tidewater shipping points on December 31, 1891, was 754,432 tons; on November 30, 1891, 637,846 tons; increase, 116,586 tons. Of the total product in 1891, 52.72 % was from the Wyoming region, 15.78 % from the Lehigh region and 31.50 % from the Schuylkill region. Eastern competitive tonnage, including all Coal which, for final consumption or in transit, reaches any point on the Hudson River Railroad or Bay of New York, or which passes out of the Capes of the Delaware, 1891, 13,313,719 tons; 1890, 11,792,317 tons. It will be noticed that the Lehigh region gained scarcely anything, while the Wyoming and Schuylkill regions increased their shipments over 4,500,000 tons. The Schuylkill region, which is almost entirely controlled by the Reading Railroad, shipped 40 % of the increase and the Wyoming region nearly 59 %.

A meeting of the Anthracite sales agents was held in this city on Tuesday, but contrary to general expectation nothing was done in reference to Reading's allotment or any other question. It was not a presidents' meeting, and therefore was not competent to act on so important a matter. It had been reported that the Reading would insist upon its full proportion irrespective of the new business secured under an arrangement with Coxe Bros., who formerly reached the market over the Lehigh Valley. The latest report is that the Reading would be satisfied to mine more than its quota only when trade is brisk. But, as already stated, there was practically no meeting.

The Radford Pipe and Foundry Company, lessees of the Anniston Pipe Works, have reached a conclusion of negotiations with the lessors by which the latter agree to put in three new cranes and otherwise modernize and perfect the plant without any expense to the lessees. Until this result was reached the lessees had threatened to resign the lease at the end of a year. The agreement reached extends the positive term of occupancy a longer period. The works now employ about 450 men, and the statement that they are to be permanently operated will be pleasant news to the city of Anniston. We have been informed that the company have secured three important contracts since the first of the year and are looking for a fair year's work.

The Harriman direct process is being worked at Rockaway, N. J.

**Goodell's Automatic Drill.**

H. N. Mayhew Company, Shelburne Falls, Mass., are manufacturing this article, illustrations of their No. 3 drill being shown in the accompanying cuts. The

is turned again until the hole is at blank O. The point is made that the use of this drill will save the operator much valuable time, both in hunting for drill points which may have been lost and in selecting the exact size which he may desire to use.

cut, which illustrates all its principal features. The manufacturers claim that the plan combines the advantages of city water works without the city tax. It will furnish clear water from the well at a pressure and at uniform temperature. Compressed

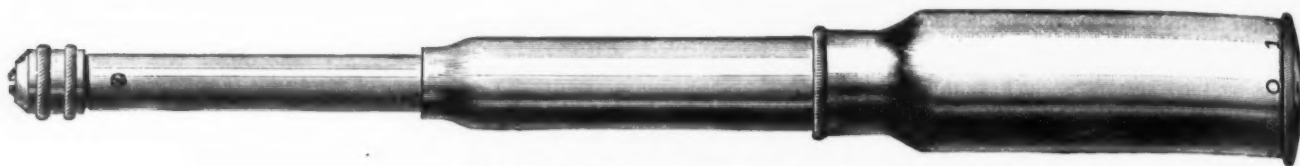


Fig. 1.—Goodell's Automatic Drill No. 3.



Fig. 2.—Drill Points for Goodell's Automatic Drill.

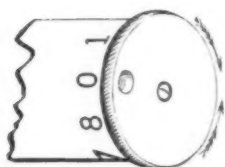


Fig. 3.—The Position of Pin when Not in Use.

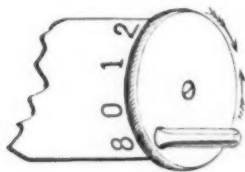


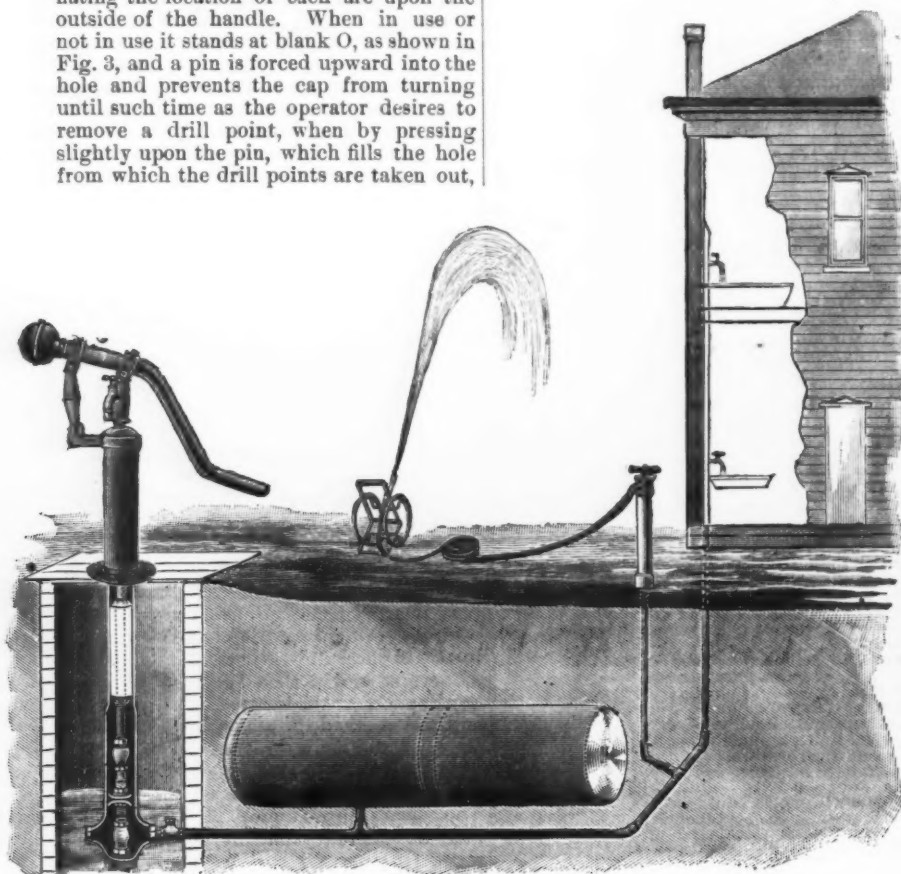
Fig. 4.—Removing a Drill Point.

drill, Fig. 1, is 9½ inches long, made of hollow brass, nickel plated, and is automatic in its action. The drill points, Fig. 2, are all contained in the handle, a feature of construction which will be appreciated by the one using the drill. Each tool is contained in a separate compartment, the exact location of each size being seen at a glance, as the numbers designating the location of each are upon the outside of the handle. When in use or not in use it stands at blank O, as shown in Fig. 3, and a pin is forced upward into the hole and prevents the cap from turning until such time as the operator desires to remove a drill point, when by pressing slightly upon the pin, which fills the hole from which the drill points are taken out,

These tools are neatly packed, each in a strong pasteboard box.

### The Neff Patent Domestic Water Works.

An interesting system of water supply known as the Neff Patent Home or Do-



The Neff Patent Domestic Water Works.

the cap can be turned either to right or left until the hole is opposite the desired number, when the point can be readily removed, as shown in Fig. 4. Then the cap

mestic Water Works is being brought out by Kirtley Brothers, 1213 Walnut street, Kansas City, Mo. A general view of the apparatus is shown in the accompanying

air is the means employed for forcing water to the upper stories of the house. The plant briefly described consists of a force pump, a cylinder or reservoir underground and a supply pipe leading from it to the fixtures in the house or to the hydrants, or wherever else the water is needed. The three-way patent pump has a tubular piston rod with stop cock at the upper end, which is opened when it is desired to draw water at the pump and closed when the water is pumped into the tank. There is a brass check valve and plunger which works in the cylinder. The piston rod is surrounded by an air chamber to give a continuous flow of water. It is mentioned that the piston rod, check valve, plunger and air chamber being connected together can be taken out and returned with very little trouble. It is also noted that as the water comes through the plunger, check valve and piston rod there is no need of packing or stuffing box. The pump being placed in the well as shown is connected by a ½-inch pipe to an air-tight tank of any capacity from 2 to 30 barrels. As shown in the illustration, there is but one opening in the tank, which is on the under side when the tank is in position. As the water is forced in the opening the air escape is cut off, and the air is compressed until any reasonable pressure desired is reached. The check valve in the supply pipe prevents the water from returning to the pump. It is stated that a man of ordinary strength can fill the tank two-thirds full, which will give a pressure of from 65 to 70 pounds to the square inch, or more than the average domestic pressure carried on city systems of water works. The tanks in ordinary use hold, as a rule, 6 to 20 barrels. The advantage of having it below ground is that the temperature of the water is the same as the well, cool in summer and will not freeze in winter. The pump is also made anti-freezing and to drain automatically. The apparatus can be operated with a windmill or engine if desired, and it is pointed out that it is an excellent system of fire protection, as water from the tank can be thrown from 40 to 60 feet through a hose. In using the pump the water is lifted by the up stroke into the cylinder, and forced by the down stroke into the tank. The tanks of more than two barrels capacity are of steel, double riveted, and tested to 150 pounds air pressure.

The Chicago, Burlington and Quincy Railroad Company have issued from their main office in Chicago a handsome publication of 175 pages, devoted exclusively to schedules of through freight rates. Rates are given to all principal points in the West, Northwest and Southwest as in effect on January 1, 1892.



**Schuermann's Chuck.**

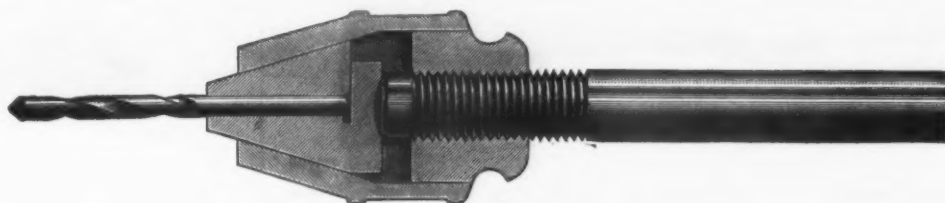
H. Mueller Mfg. Company, Decatur, Ill., are introducing this article, as illustrated herewith. The cut shows a sectional view of the chuck with shank for drill press or lathe use. It is stated that the chuck is made only from the best material, all the

**The Lawn Razor.**

Blair Mfg. Company, Springfield, Mass., are introducing the above mower, as illustrated herewith. It has driving wheels  $9\frac{1}{4}$  inches in diameter, and four revolving knives, making a complete cutting cylinder 7 inches in diameter exceedingly high

intended to give to lawn owners a machine that will do superior work. The Lawn Razor is made in five sizes—15, 17, 19, 21 and 25 inch cut.

Wm. H. Brown, Worcester, Mass., manufacturer of the Universal Knife

*Schuermann's Chuck.*

working parts being made of hardened steel and especially adapted to the use required. The jaws are made to a special gauge from the best tool steel, and are interchangeable. The point is made that the shank presses against one jaw only, thus insuring uniformity and evenness of pressure, while the construction of the jaws is such that it is impossible to loose either of the jaws from the chuck. The shank is  $\frac{1}{8}$  inch in diameter and  $3\frac{1}{4}$  inches long, the tool holding drills from  $\frac{1}{4}$  to  $\frac{1}{2}$  inch inclusive.

**Steel Spring Hinge.**

E. C. Stearns & Co., Syracuse, N. Y., are introducing Stearns' Unbreakable Hinge, as illustrated herewith. The hinge has three parts—two leaves and the spring—each leaf being one solid piece of extra quality wrought steel, while the spring is held by lips formed up from the leaves.

The spring action is referred to as being new and as holding the door strongest at the closing point. It is claimed that this action, while reducing the strain on the spring, insures increased efficiency and durability.

The point is made that the weight of the Unbreakable is very much less than

needed. The high speed results from compounding the gears, transmitting the power from the driving wheels to the knives, which, it is claimed, in operation cuts the lawn as smooth as a carpet. The point is made that no extra power is re-

Sharpener, recommends it for sharpening knives used for cutting flesh, leather, cloth, rubber, cork, &c. The machine grinds both sides of the knife simultaneously, and is adjustable for bevels of any desired angle. It is especially adapted

*The Lawn Razor.*

quired to operate the mower, notwithstanding the high speed at which it runs, as by placing the pawl connection in the

for hotels, boarding houses, restaurants, markets, &c.

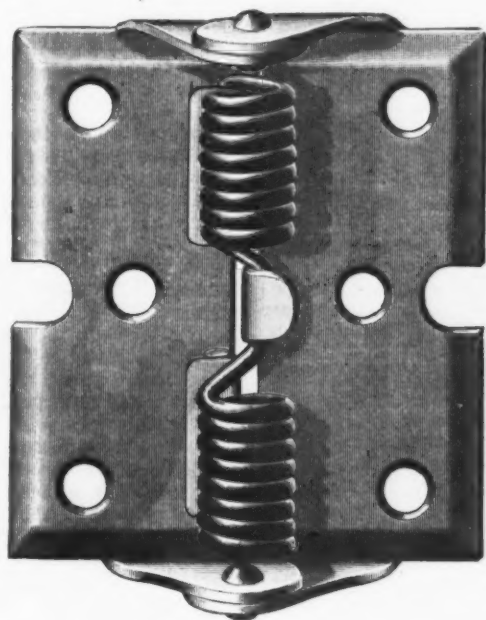
**Henry's Anti-Window Rattler.**

John T. Henry & Son, Hamden, Conn., are introducing this article, as illustrated herewith. It is made of sheet spring brass, well finished and heavily nickel plated. It is stated that a sensitive spring allows it to be inserted between the sash and stop in any opening from the thickness of

*Henry's Anti-Window Rattler.*

a thin cardboard to  $\frac{1}{4}$  inch space. It is referred to as useful, effective and ornamental. Samples will be mailed free by the manufacturers to the trade upon receipt of 3 cents in stamps.

A New York company recently complained to the Treasury Department that the publication of the result of certain reappraisements of goods imported by them did them serious injury, and they requested that steps be taken to prevent such matters from becoming public. Acting Secretary Spaulding replied that the statutes require the publication of all important customs decisions for the information of customs officers and the public.

*Steel Spring Hinge.*

that of cast hinges, leaving no useless metal on which to pay freight. Special attention is called to the fact that these hinges are packed each pair in a neat pasteboard box, ready to hand to the customer without further wrapping.

driving shaft of the wiper the gears are free to remain stationary, except when actually transmitting motion to the cutting cylinder. The manufacturers refer to the mower entire as being made in the very best manner, of the finest materials, and as

**Trolley-Track Door Fixtures.**

Coburn Trolley-Track Mfg. Company, Holyoke, Mass., are offering the trade hanging door fixtures, as illustrated herewith. Fig. 1 shows the door in working position, while Fig. 2 gives an excellent

parts in their proper places to fit the openings for which they are intended, thus leaving but very little for the carpenter to do; the whole thing, it is stated, taking but about 30 minutes to put in position. It is claimed that there is no chance for chips or plastering to fall into the

hours' continuous run she averaged 15 knots per hour, which is one knot better than the Government requires. The necessary alterations to convert her from a peaceful trader to an armed vessel of war

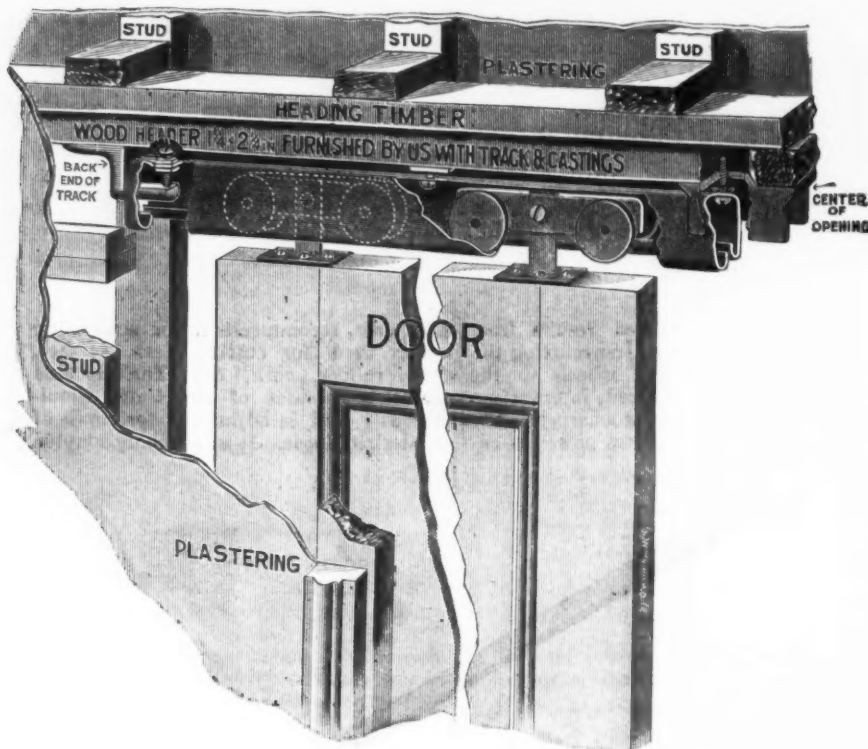


Fig. 1.—Trolley-Track Door Fixtures.

idea of the construction of the trolleys, track and hanger. The track, hangers and carriers are of steel; the trolleys are of vulcanized fiber. It is stated that the bearings are self lubricating and never require oiling after they leave the factory, and that the movable parts are so arranged that no two metal surfaces come together, thus reducing the noise to a minimum.

track; that little space is required between the studding; that the track being attached to the header at three points only it is not affected by the warping and twisting of the wood work, and that the hangers are provided with a lateral motion which prevents the fixtures from binding should the door become warped. Figs. 3 and 4 show different

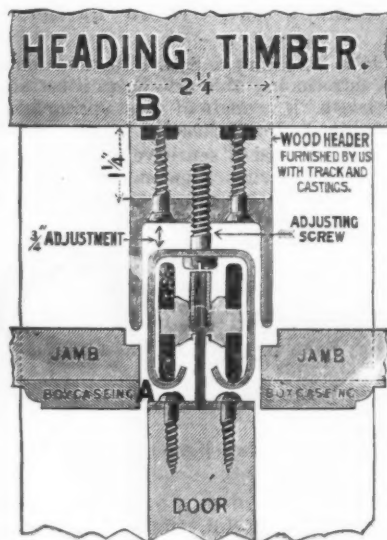


Fig. 3.—Hung without Soffit.

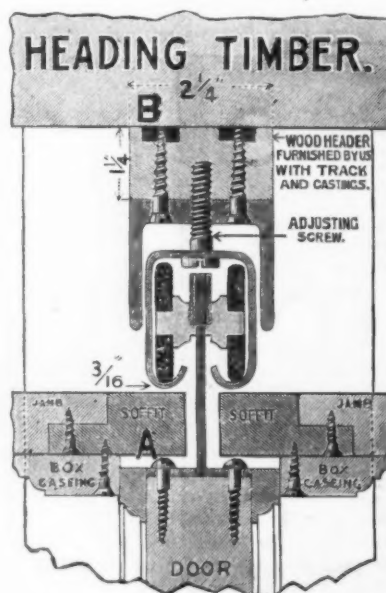


Fig. 4.—Hung with Soffit.

The adjustment is in the track, and not in the hanger, and as the door is raised and lowered with the track, it is claimed that the door cannot bind against the track, nor can it bind on the floor. It is remarked that the peculiar construction of the hanger prevents the tilting of the door and the consequent displacement of the trolleys. The track of each set is bolted on to a header at the factory with all the

plans for hanging doors. The hangers, with the necessary guides, stops, screws, &c., for each set, are neatly packed in a wooden box, together with full directions for putting them up.

The Newport of the Pacific Mail Steamship Company completed recently a successful steam trial under supervision of the Naval Board of Inspection. During a four

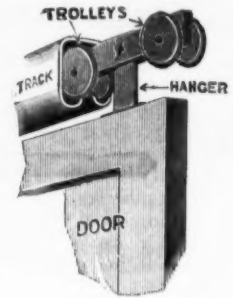


Fig. 2.—Trolleys, Track and Hanger.

are not considerable. She is an iron screw steamship of 2735 tons, constructed in 1880 at Chester, Pa., by Roach & Son.

**The Wagner Hollow Ware.**

The Wagner Mfg. Company of Sidney, Ohio, have recently brought out a line of high grade hollow ware in which the trade



The Wagner Hollow Ware.—Fig. 1.—View of Low Kettle.

cannot fail to be interested. The company have lately erected extensive works especially equipped for the production of extra finish cast-iron stove hollow ware,



Fig. 2.—View of Tea Kettle.

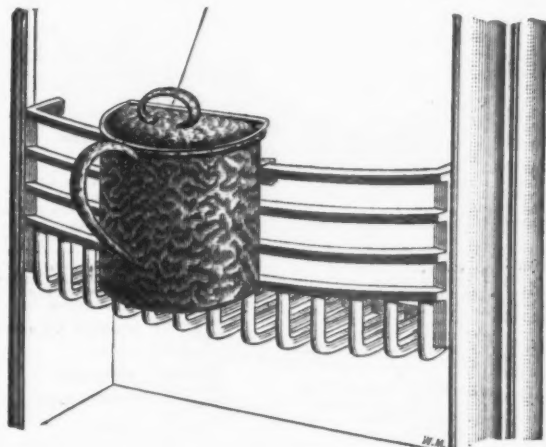
sugar kettles, grates, &c., and are prepared to promptly meet the demands of the trade. Among other features, their works have a nickel-plating department, thus permitting the production of very



fine nickel-plated ware, which is meeting with a large and growing demand. In the accompanying illustrations we show two styles of hollow ware which the company are turning out. Fig. 1 representing a low kettle, which is made in three sizes and finished with a high polish or nickel plated, as preferred, while Fig. 2 represents a tea kettle made in three sizes with pit or flat bottom and finished plain or nickel-plated. The bail, it will be observed, is so constructed as to remain cool to the touch. The manufacturers report a large demand for their new style sugar kettle, which is made in seven sizes and having a capacity ranging from 8 to 30 gallons. These new kettles are of fine finish and very durable. The members of the new company are W. H., M. M. and B. P. Wagner. The superintendent of the works is R. O. Bingham, formerly connected with the Marion Stove Company of Marion, Ind.

### Grate Water Heater.

The St. Louis Stamping Company, St. Louis, Mo., are introducing this article, as illustrated herewith. It is adapted to



Grate Water Heater.

use on any grate, and is referred to as heating water rapidly. It may be used with good results in sickrooms, or at night when the kitchen fire has been allowed to go out, or at any time when a limited quantity of hot water is needed quickly.

### Skylight Lifter.

George W. Hamilton, 5 Sidney street, Dorchester, Mass., is introducing a skylight lifter manufactured by the F. W. Lowe Mfg. Company, as illustrated in Fig.

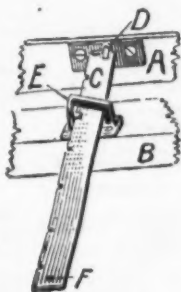


Fig. 1.—Skylight Lifter.

1. The plate A is fastened to the skylight sash, to which is attached the lifting bar C, having a slotted edge. Catch E is attached to the skylight frame B, through which the slotted bar is passed. The slots in the bar engage in the catch, and the

bar is automatically locked in position by the spring D. The lifter is operated by raising up the slotted edge of the bar, allowing it to be slid open or shut through the locking plate, as shown in Fig. 2. The bar being released from the hand of the operator, the spring automatically engages

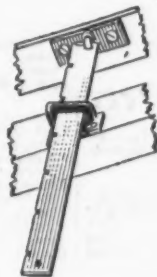


Fig. 2.—Skylight Being Opened.

the bar with the locking plate, making it impossible, it is stated, for the skylight to fall or to blow open. The point is made that the lifter is so simple in construction that the skylight may be opened or closed if desired by means of a detached wooden

handle of the required length. The lifter is referred to as possessing advantages over the ordinary styles of lifts and fasts.

We are advised that an agreement has been reached by which A. W. Thompson of New Castle, Pa., who has been acting as receiver for Jas. P. Witherow, engineer and contractor, of Pittsburgh for some time, will resign on Monday, the 25th inst., and the entire affairs of Mr. Witherow will be placed in the hands of Alexander Thomas, of Alexander Thomas & Co., iron and steel factors, of Pittsburgh, who was recently appointed assignee by the courts. The creditors will no doubt be pleased to learn that such an arrangement has been made, as it is believed it will lead to an early resumption of the works of Mr. Witherow, which have been closed down entirely for several weeks past. It is also thought that a conference will be held between Alexander Thomas, the receiver, and the creditors at an early date, at which it is expected that arrangements will be made to put into effect the original extension of four years which was granted to Mr. Witherow. Should this arrangement not be made, it is likely that the scheme already talked of by some of the largest creditors, which is that a stock company be formed to operate the works, will then be considered. At all events it is quite certain that some arrangement will be made in the near future by which Mr. Witherow's affairs will be put in better shape both for Mr. Witherow and the creditors than they are in at present.

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# CURRENT HARDWARE PRICES.

JANUARY 20, 1892.

Note.—The quotations given below represent the Current Hardware Prices which prevail in the market at large. They are not given as manufacturers' prices, and manufacturers should not be held responsible for them. In cases where goods are quoted at lower figures stated that the manufacturers are selling at the prices quoted, but simply that the goods are being sold, perhaps by the manufacturers, perhaps by the jobbers, at the figures named.

## Adjusters, Blind.

Domestic.....\$ dos \$3.00, \$3.50  
Wheeler.....\$ dos \$10.00.....\$60.10  
North's.....\$ dos \$10.00.....\$60.10  
Zimmerman's—See Fasteners Blind.

## Ammunition—See Caps, Cartridges, Shells, &c.

## Anvils.

Eagle Anvil, \$ 10.....\$15.15  
Peter Wright's.....\$11.11  
Armstrong's Mouse Hole.....\$10.10  
Armstrong's Mouse Hole, Extra.....\$12.12  
Trenton.....\$10.10  
Wilkinson's.....\$10.10  
Moore & Barnes Mfg. Co.....\$3.35

## Anvil Vise and Drill.

Millers Falls Co., \$12.00.....\$20.25  
Cheney Anvil and Vise.....\$25.25  
Allen Anvil and Vise, \$3.00.....\$40.10  
Star.....\$42.55

## Ap to Parers—See Parers, Apple, &c.

## Augers and Bits.

Douglas Mfg. Co.....\$70.10  
Wm. A. Ives & Co.....\$10.25  
Humphreysville Mfg. Co.....\$10.25  
French, Swift & Co. (F. H. Beecher, P. S. & W. Co.).....\$10.25  
Rockford Bit Company.....\$10.25  
Cook's, Douglas Mfg. Co.....\$10.25  
Cook's, H. H. Copper Co. \$10.25  
Ives' Circular Lip.....\$10.25  
Patent Solid Head.....\$10.25  
C. E. Jennings & Co., No. 10, extension lip.....\$10.25  
C. E. Jennings & Co., No. 30.....\$10.25  
C. E. Jennings & Co., Auger Bits, set, 25' quarters, No. 5, \$5; No. 30, \$5.50  
Lewis' Patent Single Twist.....\$10.25  
Russell Jennings' Augers and Bits.....\$10.25  
Imitation Jennings' Bits.....\$10.25  
Pugh's Black.....\$10.25  
Car Bits.....\$10.25  
Car Bits, P. S. & W. Co.....\$10.25  
Snell's Car Bits.....\$10.25  
L. Hommedieu Car Bits.....\$10.25  
Forster Pat. Auger Bits.....\$10.25  
Cincinnati Bell-Hangers' Bits.....\$10.25

## Bit Stock Drills.

Morse Twist Drills.....\$10.25  
Standard.....\$10.25  
Cleveland.....\$10.25  
Syracuse, for metal.....\$10.25  
Syracuse, for wood (wood list).....\$10.25  
Cincinnati, for wood.....\$10.25  
Cincinnati, for metal.....\$10.25

## Expansive Bits.

Clark's small, \$18; large, \$36.....\$35.10  
Ives' No. 4, \$ dos \$60.....\$40.10  
Swan's.....\$40.10  
Steer's, No. 1, \$36; No. 2, \$36.....\$40.10  
Stearns' No. 2, \$48.....\$20.10

## Gimlet Bits.

Common.....\$ gross \$2.75 @ \$3.25  
Diamond.....\$ dos \$1.10.....\$25.10  
Bee.....\$25.10  
Double Cut, Shepardson's.....\$45.10  
Double Cut, Ct. Valley Mfg. Co.....\$30.10  
Double Cut, Hartwell's, \$ gro.....\$45.25  
Double Cut, Douglas's.....\$40.10  
Double Cut, Ives.....\$60.10

## Hollow Augers.

Ives.....\$33.10  
French, Swift & Co.....\$33.10  
Douglas.....\$33.10  
Bonney's Adjustable, \$ dos \$48.....\$40.10  
Stearns.....\$20.10  
Ives' Expansive, each \$4.50.....\$50.25  
Universal Expansive, each \$4.50.....\$50.25  
Wood's.....\$35.10  
Cincinnati Adjustable.....\$55.10  
Cincinnati Standard.....\$55.10

## Ship Augers and Bits.

L'Hommiedieu's.....\$15.10 @ \$15.10  
Watrous.....\$15.10 @ \$15.10  
Snell's.....\$15.10 @ \$15.10  
Snell's Ship Auger Pat'n Car Bits.....\$15.10 @ \$15.10

## Awl Hafts—See Hafts, Awl.

## Awls.

Awls, Sewing, Common.....\$ gr. \$5 @ \$9  
Awls, Should, Peg.....\$ gr. \$1.50 @ \$1.55  
Awls, Pat. Peg.....\$ gr. \$2 @ \$2  
Awls, Shouldered Brad.....\$ gr. \$1.30 @ \$1.40  
Awls, Handled Brad.....\$ gr. \$2.50 @ \$3.00  
Awls, Handled Scratch.....\$ gr. \$4.00 @ \$4.50  
Awls, Socket Scratch.....\$ dos \$1.10 @ \$1.20

## Awl and Tool Sets—See Sets, Awl and Tool.

## Axes.

First quality, best brands.....\$7.00 @ \$7.50  
First qual., other brands.....\$6.25 @ \$6.75  
Second quality.....\$6.00 @ 6.50

## Axle Grease—See 1 case, Axle.

## Axles.

No. 1, 4 @ \$5, No. 2, 5 @ \$6  
Nos. 7 to 14.....\$5.50 @ \$5.75  
Nos. 15 to 18.....\$7.50 @ \$8.00  
Nos. 19 to 22.....\$7.00 @ \$7.50  
Concord Axles, loose collar.....\$5.00 @ \$5.50  
Concord Axles, solid collar.....\$6.00 @ \$6.50  
National Tubular Self-Oiling.....\$3.50 @ \$3.75

## Bag Holders.—See Holders, Bag.

## Balances.

Spring Balances.....\$40.10  
No. 2000 30 30  
Chatillon, \$ dos.....\$0.80 0.95 1.75 net  
Chatillon Straight Balances.....\$40.10  
Chatillon Circular Balances.....\$50.10

## Barb Wire.—See Wire, Barb.

## Bars.

Cross.....\$ 23.50  
Cast Steel.....\$ 23.50  
Iron, Steel Points.....\$ 23.50

## Basins, Wash.

Standard Fiberglass, No. 1, 10 1/2-inch, \$2; 12-inch, \$2.55; 15 1/4-inch, \$2.75; 15-inch, \$3.25.

## Beams, Scale.

Scale Beams, List Jan. 12, '82.....\$50.10 @ \$50.10

Chatillon's No. 1.....\$40.10  
Chatillon's No. 2.....\$50.10  
Custer's.....\$33.35

## Benders.

Dover.....\$ dos \$1.50  
Duplex (Standard Co.).....\$ dos \$1.25  
Duplex Extra Heavy (Standard Co.).....\$ dos \$1.50

Bryant's.....\$ gro \$14.00  
Double (H. & R. Mfg. Co.), \$ gro. No. 0, \$13.00; No. 1, \$16.00; No. 2, \$18.00

Easy (H. & R. Mfg. Co.), \$ gro \$12.50  
Triple (H. & R. Mfg. Co.), \$ gro \$16.50  
Spiral.....\$ gro \$4.25 @ 4.50

Improved Acme (H. & R. Mfg. Co.), \$ gro \$9.00  
Paine, Diehl & Co.'s.....\$ gro \$24.00  
Silver & Co.....\$ dos \$5.50

Keystone, P. D. & C., Each, No. 1, \$1; No. 2, \$2.....\$20.10

## Bells.

Common Wrought.....\$60.10 @ \$60.10  
Western, Sargent's list.....\$70.10 @ \$70.10

Kentucky, "Star".....\$20.10 @ \$20.10  
Kentucky, Sargent's list.....\$70.10 @ \$70.10  
Kentucky Durham.....\$70.10 @ \$70.10

Dodge, Genuine Kentucky.....\$70.10 @ \$70.10  
Texas Star.....\$50.10 @ \$50.10

## Door.

Gong, Abbe's.....\$35.10 @ \$35.10  
Gong, Yankee.....\$45.10 @ \$45.10

Gong, Barton's.....\$40.10 @ \$40.10  
Gong, Taylor's.....\$25.10 @ \$25.10

Crane, Cooke's.....\$50.10 @ \$50.10  
Crane, Connell's.....\$20.10 @ \$20.10

Lever, Sargent's.....\$60.10 @ \$60.10  
Lever, Taylor's Bronzed or Plated.....\$60.10 @ \$60.10

Lever, Taylor's Japaned.....\$50.10 @ \$50.10  
Lever, R. M. Co.'s.....\$50.10 @ \$50.10

Pull, Brook's.....\$50.10 @ \$50.10  
Wollensak's.....\$30.10 @ \$30.10

Bigelow & Dowse.....\$30.10 @ \$30.10  
Taylor's.....\$30.10 @ \$30.10

## Electric.

Light Brass.....\$70.10 @ \$70.10  
Extra Heavy.....\$70.10 @ \$70.10

White.....\$70.10 @ \$70.10  
Silver Chime.....\$35.10 @ \$35.10

Globe Cone's Patent.....\$25.10 @ \$25.10  
Miscellaneous.....\$40.10 @ \$40.10

Farm Bells.....\$35.10 @ \$35.10  
Steel Alloy Church and School Bells.....\$40.10 @ \$40.10

## Bellows.

Blacksmith's.....\$60.10 @ \$60.10  
Molders.....\$40.10 @ \$40.10

Hand Bellows.....\$40.10 @ \$40.10  
Belting, Rubber.....\$70.10 @ \$70.10

Standard.....\$70.10 @ \$70.10  
Extra.....\$50.10 @ \$50.10

N.Y.B. & P. Co., Carbon.....\$60.10 @ \$60.10  
N.Y.B. & P. Co., Diamond.....\$50.10 @ \$50.10

N.Y.B. & P. Co., Para.....\$40.10 @ \$40.10

## Bench Stops—See Stops, Bench.

## Benders and Upsetters, Tire.

Stoddard's Lightning Tire Upsetters.....\$15.10 @ \$15.10  
Detroit Perfected Tire Bender.....\$15.10 @ \$15.10

## Bits.

Auger, Gimlet, Bit Stock Drills, &c., see Augers and Bits.

## Bit Holders—See Holders.

## Blind Adjusters—See Adjusters, Blind.

## Blind Fasteners—See Fasteners, Blind.

## Blind Staples—See Staples, Blind.

## Blocks.

Ordinary Tackle, list May 20, 1890.....\$70.10 @ \$70.10

Cleveland Block Co., Mal. Iron.....\$50.10 @ \$50.10  
Moore's Novelty, Mal. Iron.....\$50.10 @ \$50.10

Sure Grip Steel Tackle Blocks.....\$25.10 @ \$25.10

## Boards, Stove.

Wood Lined Crystal.....\$50.10 @ \$50.10  
Oxidized.....\$45.10 @ \$45.10

Embossed.....\$50.10 @ \$50.10  
Paper Lined Zinc.....\$55.10 @ \$55.10

Embossed.....\$55.10 @ \$55.10  
New Tacoma.....\$55.10 @ \$55.10

## Carriage, Machine, &c.

Com. list June 10, '84.....\$70.10 @ \$70.10  
Genuine Eagle, Norway, list Oct. '84.....\$80.10 @ \$80.10

Phila. pattern, list Oct. '74.....\$75.10 @ \$75.10  
R.B. & W., old list.....\$70.10 @ \$70.10

Machine, list Jan. 1, 1890.....\$75.10 @ \$75.10  
Bolt Ends, list Jan. 1, 1890.....\$75.10 @ \$75.10

## Door and Shutter.

Cast Iron Barrel, Square, &c.....\$70.10 @ \$70.10  
Cast Iron Shutter Bolts.....\$70.10 @ \$70.10

Cast Iron Chain (Sargent's list).....\$55.10 @ \$55.10  
Ives' Patent Door Bolts \$50.10 @ \$50.10

Wrought Barrel.....\$70.10 @ \$70.10  
Wrought Square.....\$70.10 @ \$70.10

Wrt Shutter, all Iron, Stanley's.....\$60.10 @ \$60.10  
Wrt Shutter, Brass Knob.....\$40.10 @ \$40.10

Wrt Shutter, Sargent's list.....\$60.10 @ \$60.10  
Wrt Sunk Flush, Sargent's list.....\$55.10 @ \$55.10

Wrt Sunk Flush, Stanley's list.....\$50.10 @ \$50.10  
Wrt B.K. Flush, Com'n's.....\$55.10 @ \$55.10

## Stove and Flow.

Stove.....\$0.05  
Flow.....\$0.05  
R. B. & W., Flow.....\$0.05

## Tire.

Common, list Feb. 23, '83.....\$65.10 @ \$65.10  
Port Chester Bolt and Nut Company.....\$65.10 @ \$65.10

Empire, list Feb. 28, '83.....\$65.10 @ \$65.10  
Keystone, Philadel., list Oct. '84.....\$75.10 @ \$75.10

Norway, Phila., list Oct. '84.....\$75.10 @ \$75.10  
American Screw Company.....\$75.10 @ \$75.10

Norway, Phila., list Oct. 16, '84.....\$80.10 @ \$80.10  
Phila., list Oct. 16, '84.....\$80.10 @ \$80.10

Bay State, list Feb. 28, '83.....\$65.10 @ \$65.10  
R.B. & W., Philadel., list Oct. 16, '84.....\$80.10 @ \$80.10

## Horers, Tap.

Common and Ring.....\$20.10 @ \$20.10  
Ive's Tap Borer.....\$35.10 @ \$35.10

Enterprise Mfg. Co.....\$30.10 @ \$30.10  
Clark's.....\$35.10 @ \$35.10

## Boxing Machines—See Machines, Boxing.

## Box, Pine—See Pine, Box.

## Boxes, Wagon.

Per 2.....\$25.10 @ \$25.10

## Braces.

American Bit Brace Co.:  
Nos. 10, 12, 20.....\$60.10 @ \$60.10

Nos. 11, 21, 34, 27.....\$70.10 @ \$70.10  
Nos. 22, 23, 25.....\$60.10 @ \$60.10

Nos. 13, 26, 36, 37.....\$70.10 @ \$70.10  
Ball Braces, net.....\$11.15 @ \$11.35

## Amidon's.

Barker's Imp'd Plain.....\$75.10 @ \$75.10  
Barker's Imp. Nickel.....\$55.10 @ \$55.10

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Hangers—	
Barn Door, old patterns.....	60¢10¢10¢70¢
Barn Door, New England.....	60¢10¢10¢70¢
Samson Steel Anti-Friction.....	55¢
Orleans Steel.....	55¢
Hamilton Wrought Wood Track.....	55¢
U. S. Wood Track.....	55¢
Champion.....	60¢10¢
Rider and Wooster, Medina Mfg. Co.'s List.....	70¢
Climax Anti-Friction.....	55¢
Climax Anti-Friction for Wood Track.....	55¢
Zenith for Wood Track.....	55¢
Seed's Steel Arm.....	50¢
Challenge, Barn Door.....	50¢
Sterling.....	50¢10¢10¢
Victor, No. 1, \$15.00; No. 2, \$16.50; No. 3, \$18.00.....	50¢25¢
Cherise.....	50¢10¢
Kidder's.....	50¢10¢60¢
Boss.....	60¢10¢
Best Anti-Friction.....	60¢10¢
Duplex (Wood Track).....	60¢10¢5¢
Terry's Pat., 7 dos pr. 4 in, \$10.00; 5 in, \$12.00.....	50¢10¢
Terry's Steel Anti-Friction Leader.....	50¢10¢
Terry's Steel Anti-Friction Ideal.....	50¢10¢
Cronk's Patent, Steel Covered.....	50¢5¢
Wood Track Iron Clad, 7 ft. 10¢.....	50¢
Carrier Steel Anti-Friction.....	50¢10¢
Architect, 7 set \$6.00.....	20¢
Felix, 7 set \$4.50.....	20¢10¢
Richards.....	30¢50¢10¢
Lane's Standard.....	50¢50¢25¢
Lane's New Standard.....	50¢50¢25¢
Lane's Parlor.....	40¢
Ball Bearing Door Hanger.....	20¢10¢25¢10¢
Warner's Pat.....	20¢10¢20¢10¢10¢
Stearns' Anti-Friction.....	20¢10¢20¢10¢10¢
Stearns' Challenge.....	25¢10¢25¢10¢10¢
Faultless.....	40¢40¢25¢
American, 7 set \$6.00.....	50¢10¢
Bider & Wooster, No. 1, \$2.45; No. 2, 75¢.....	40¢
Paragon, Nos. 1, 2 and 3.....	40¢10¢
Cincinnati.....	25¢10¢
Paragon, Nos. 5, 5 1/2, 7 and 8.....	20¢10¢
Crecent.....	60¢60¢10¢
Nickel Cast Iron.....	40¢
Nickel, Malleable Iron and Steel.....	40¢
Scranton Anti-Friction Single Strap.....	50¢
Wild West, 4 in. Wheel, \$15.00; 5 in. Wheel, \$21.00.....	45¢
Star.....	40¢10¢40¢10¢25¢
May.....	50¢50¢10¢
Barry, \$6.00.....	40¢10¢
Intestate.....	40¢
Magie.....	45¢
Pendulum, Payson's.....	45¢
Harness Snaps—See Snaps.	
Hatchets—	
American Axe and Tool Co.	
Blood's.....	
Hunt's.....	
Ford's.....	
Mann's.....	
Peck's.....	
Underhill's.....	40 & 10
Buffalo Hammer Co.....	@
Fayette R. Plumb.....	50¢5¢
C. Hammond & Son.....	
Sargent & Co.....	
P. S. & W. Co.....	
Ten Eyck Edge Tool Co.....	
Collins.....	10¢
Schulte, Lohoff & Co.....	50¢50¢5¢
Hay and Straw Knives—See Knives.	
Hinges—	
Blind Hinges—	
Parker.....	75¢25¢
Ruffer.....	50¢
Clark's, Nos. 1, 3, 5, 40 and 50	
Clark's, No. 12.....	75¢10¢25¢30¢
Sargent's Nos. 1, 3, 5, 11, 13	
Sargent's, No. 12.....	77¢10¢10¢
Reading's Gravity.....	75¢10¢75¢10¢5¢
Shepard's.....	75¢10¢
Noiseless.....	75¢10¢
Niagara.....	80¢
Buffalo.....	80¢
Clark's Genuine Pattern.....	80¢
O. S., Lull & Porter.....	75¢10¢
Ame, Lull & Porter.....	75¢
Queen City Reversible.....	70¢10¢50¢75¢
Clark's Lull & Porter, Nos. 0, 1, 1 1/2, 2, 2 1/2.....	75¢10¢25¢
North's Automatic Blind Fixture, No. 2, for Wood, \$9.00; No. 3, for Brick, \$11.50.....	10¢
Gate Hinges—	
Western.....	7 dos \$4.40, 60¢
N. E.....	7 dos \$7.00, 55¢
N. E. Reversible.....	7 dos \$6.20, 55¢10¢
Clark's, Nos. 1, 2, 3.....	60¢10¢5¢
N. Y. State.....	7 dos \$13.50, 50¢
Automatic.....	60¢10¢5¢
Shepard's.....	60¢10¢5¢
Spring Hinges—	
Geer's Spring and Blank Butts.....	40¢
Union Spring Hinge Co.'s List, March 1886.....	2¢
Barker's Double Acting.....	25¢
Union Mfg. Co.....	25¢
Bommer's.....	30¢
Buckman's.....	15¢20¢
Chicago.....	30¢
Bardsley's Patent.....	40¢
Acme.....	30¢
U. S. State.....	25¢10¢
Empire and Crown.....	20¢
Hero and Monarch.....	25¢
American, Gem, and Star.....	20¢
Oxford.....	20¢
Wiles.....	10¢
Devore's.....	40¢
Bex.....	40¢
Royal.....	40¢
Reliable.....	60¢
Champion.....	60¢
Stearns.....	50¢10¢
Samson, 7 gross.....	\$14.00
Wrought Iron Hinges.	
List February 14, 1891.	
Strap and T.....	50¢10¢

Corrugated Strap & T.....	50¢50¢10¢
Screw Hook and Strap.....	6 to 12 in., 7¢ 1/2, 4¢
Strap.....	14 to 20 in., 7¢ 1/2, 4¢
Screw Hook and Eye.....	1/2 in., 7¢ 1/2, 4¢
	1 in., 7¢ 1/2, 4¢
	1 1/2 in., 7¢ 1/2, 4¢
	2 in., 7¢ 1/2, 4¢
	3 in., 7¢ 1/2, 4¢
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	425 in., 7¢ 1/2, 4



**Hickory.** 20x10@30x10x10  
**Hickory.** 20x10@30x10x10  
**Lignum vitae.** 20x10@30x10x10  
**B. & L. Block Co., Hickory & L. V.** 20x10@30x10x10

**Hatters. Regular List.** 60x10@60x10x5

**Measures.** Standard Fiberware, No. 1, peck, 7

**Meat Cutters.** See Cutters, Meat.

**Menders, Harness.** 2.00

**Mills.** Coffee-

**Box and Side, List Jan. 1, 1888.** 60x10@60x10x10

**Net prices are often made which are**

**lower than above discount.**

**American, Enterprise Mfg. Co.** 20x10@30x10x10

**The Swift, Lane Bros.** 20x10@30x10x10

**Mining Knives.** See Knives, Mining.

**Molasses Gates.** See Gates, Molasses.

**Money Drawers.** See Drawers, Money.

**Mowers, Lawn.**

**Pennsylvania, New Model, Excelsior,**

**Continental, &c.** 60x10@60x10x10

**Philadelphia.** 60x10@60x10x10

**Perfection.** 60x10@60x10x10

**Easy.** 60x10@60x10x10

**Bay State.** 60x10@60x10x10

**Other Machines.** 60x10@60x10x10

**Muzzles.** 7 doz. \$3.00, 25 x

**Nails.** Out and Wire. See Trade Report.

**Wire Nails, Papered.**

**Association list, July 15, '89.** 75x10@80x10

**Tack Mfrs' list.** 70x10@70x10x10

**Wire Nails, Standard Penny.**

**Card June 1 '89 base.** \$1.95 @ \$2.00

**Horse.**

**Nos. 6 7 8 9 10**

**Ansable.** 23x26 23x26 24x23 23x26

**Clinton, Fin.** 10x17 16x15 14x14 30x

**Essex.** 23x26 25x24 23x26 40x5x5x23

**Lyra.** 10x17 16x15 14x14 30x

**Nowden.** 19x17 16x15 14x14 30x

**Putnam.** 23x21 20x19 18x16 25x25x25

**Vulcan.** 23x21 20x19 18x16 25x25x25

**Northwest.** 23x21 20x19 18x16 25x25x25

**Globe.** 23x21 20x19 18x16 25x25x25

**Boston.** 23x21 20x19 18x16 25x25x25

**A. C.** 25x28 23x21 21x21 25x10x10x10

**C. B. K.** 25x23 22x21 21x21 25x10x10x10

**Hand S.** 25x23 22x21 21x21 25x10x10x10

**Champlain.** 23x26 25x24 23x26 40x10x10

**Saranac.** 23x21 20x19 18x16 25x10x10x10

**Champion.** 23x21 20x19 18x16 25x10x10x10

**Capwell.** 23x26 25x24 23x26 35x5x5x10x10

**Scar.** 23x21 20x19 18x16 25x10x10x10

**Anchor.** 23x21 20x19 18x16 25x10x10x10

**Western.** 23x21 20x19 18x16 25x10x10x10

**Empire Ironed.** 14 x 2 1/2

**Picture.**

**Brass Head, Sargent's list.** 50x10@10x10

**Brass Head, Combination list.** 50x10@10x10

**Porcelain Head, Sargent's list.** 50x10@10x10

**Porcelain Head, Combination list.** 50x10@10x10

**Wiles' Patent.** 40x10@10x10

**Nail Pullers.** See Pullers, Nail.

**Nail Sets.** See Sets, Nail.

**Nut Crackers.** See Crackers, Nut.

**Nuts.** List Dec. 18, 1889.

**Square, Hex.**

**Hot Pressed.** 5.35x 5.9x off list.

**Cold Punched.** 5.00x 5.10x off list.

**In packages of 100 lb.** add 1.00x lb.

**net; in packages less than 100 lb.** add 1/2 lb. net.

**Oakum.**

**Best or Government.** 7x7 7/4x

**U. S. Navy.** 7x7 7/4x

**Savvy.** 7x7 7/4x

**Oilers.**

**Zinc and Tin.** 65x10@70x10

**Brass and Copper.** 50x10@50x10x10

**Malleable, Hammers, Improved, No. 1,**

**25.00; No. 2, 24.00; No. 3, 23.00.**

**Malleable, Hammers, Old Pattern, same**

**list.** 20x10@20x10x10

**Prior's Pat. or "Paragon" Zinc.** 60x10@10x10

**Prior's Pat. or "Paragon" Brass.** 60x10@10x10

**Olmead's Tin and Zinc.** 50x10@50x10x10

**Olmead's Brass and Copper.** 50x10@50x10x10

**Broughton's Zinc.** 50x10@50x10x10

**Broughton's Brass.** 50x10@50x10x10

**Gem F. D. & Co.** 7x7 7/4x

**Star.** 7x7 7/4x

**Sprague, No. 1, 23.00; No. 2, 22.00; No. 3, 21.00.**

**Excelsior No. 1 23.00; No. 2, 22.00; No. 3, 21.00.**

**World's Best.** 2.30x 2.30x 2.30x

**Universal.** 2.30x 2.30x 2.30x

**Domestic.** 2.30x 2.30x 2.30x

**Champion.** 2.30x 2.30x 2.30x

**Packing, Steam.**

**Rubber.**

**Standard.** 60x10@60x10x10

**Extra.** 60x10@60x10x10

**N. Y. B. & P. Co., Standard.** 60x10@60x10x10

**N. Y. B. & P. Co., Empire.** 60x10@60x10x10

**N. Y. B. & P. Co., Salamander.** 25x

**Jenkins' Standard.** 7x8 7/4x 25x25x25

**Miscellaneous.**

**American Packing.** 10x11 7/4x 7x

**Russia Packing.** 14x14 7/4x 7x

**Tallan Packing.** 18x18 7/4x 7x

**Cotton Packing.** 15x17 7/4x 7x

**Jute.** 7x8 7/4x 7x

## Pails.

### Galvanized Iron.

#### Quarts 10 12 14

Hill's Light Weight, 7 doz. \$2.75 3.00 3.25

Hill's Heavy Weight, 7 doz. 3.00 3.25 3.75

Helwig's. 2.50 2.75 3.00

Sidney Shepard & Co. 2.35 2.55 3.05

Iron Clad. 2.50 2.75 3.00

Fire Buckets. 2.75 3.25 3.50

Buckets, see Well Buckets.

**Indurated Fibre Ware.** 35x

Star Pails, 12 qt. 7 doz. \$5.40

Stable and Milk, 14 qt. 7 doz. \$6.00

Fire Pails, deep. 7 doz. \$5.40

round bottom. 7 doz. \$7.30

**Standard Fibre Ware.**

Water Pails, 12 qt., per doz. \$4.00

Dairy Pails, 14 qt., per doz. 4.50

Fire Pails, No. 1, 12 qt., per doz. 4.50

Fire Pails, No. 3, 14 qt., per doz. 5.00

Sugar Pails. 6.00 6.50

Horse Pails. 5.00

Buggy Pails. 4.00

Slop Jars (bal. trap). 8.00 9.00

Chamber Pails, 14 qt. 6.50 7.50

**Pans.**

**Dripping.**

Small sizes. 7 doz. \$ 6 1/4

Large sizes. 7 doz. \$ 6 3/4

Silver & Co. (Covered). 40x

**Fry.**

**Standard List:**

No. 0 1 2 3 4 5

7 doz. \$3.00 \$3.75 \$4.25 \$4.75 \$5.25

No. 6 7 8 9 10

7 doz. \$6.00 \$7.00 \$8.00 \$9.00

Polished, regular goods. 75x75x10x10

Aeme Fry Pans. 60x10x10

**Dust.**

Steel Edge, No. 1. 7 doz. \$1.75

**Paper and Cloth.**

Sand and Emery.

List April 19, 1886. 50x50x10x10

Sibley's Emery and Crocus Cloth. 30x

**Parers.**

**Apple.**

Advance. 7 doz. \$4.75

Baldwin. 7 doz. 5.25

Bonanza. 7 doz. 4.00

Daisy. 7 doz. 4.00

Dandy. 7 doz. 4.00

Eclipse. 7 doz. 4.25

Eureka, 1888. 7 doz. 4.00

Family Bay State. 7 doz. 12.00

Favorite. 7 doz. 4.00

Gold Medal. 7 doz. 4.00

Improved Bay State. 7 doz. 27.00 @ 30.00

Little Star. 7 doz. 4.50

Monarch. 7 doz. 13.00

New Lightning. 7 doz. 5.50

Orion. 7 doz. 4.00

Penn. 7 doz. 4.00

Perfection. 7 doz. 4.00

Pomona. 7 doz. 4.00

Rocking Table. 7 doz. 6.00

Turn Table. 7 doz. 4.50

Victor. 7 doz. 13.50

Waverly. 7 doz. 4.00

White Mountain. 7 doz. 4.25

73. 7 doz. 7.00

**Potato.**

White Mountain. 7 doz. \$4.50

Antim Combination. 7 doz. \$5.50

Hoosier. 7 doz. \$13.50

Saratoga. 7 doz. \$5.50

**Pencils.**

Faber's Carpenters'. high list 50x

Faber's Round Gilt. 7 doz. \$5.25

Dixon's Lead. 7 doz. \$4.50

Dixon's Lumber. 7 doz. \$6.75

Dixon's Carpenters'. 10x

**Picks.**

Railroad or Adze Eye, 5 to 6, \$12.00;

6 to 7, \$13.00. 60x10@60x10x10

**Picture Nails.** See Nails, Picture.

**Pinking Irons.** See Irons, Pinking.

**Pins.**

**Bow.**

Humason, Beckley & Co's. 60x10x10

Sargent & Co's. 17 and 18. 60x10x10

Peck, Stow & W Co. 50x10@50x10x10

**Curtain.**

Silvered Glass. net

White Enamel. net

**Eucalyptus.**

Iron, list Nov. 11, 1885. 50x10@50x10x10

Brass. 60x10@60x10x10

**Pipe, Wrought Iron.**

List September 18, 1889.

1 1/4 and under, Plain. 57x 60x 63x

1 1/4 and under, Galvanized. 47x 65x 70x

1 1/4 and over, Plain. 47x 65x 70x

1 1/4 and over, Galvanized. 45x 75x

Boiler Tubes. 55x

Sizes up to 2 1/2 in. inclusive. 63x

Sizes 3 in. and larg r. 65x

Casing. 55x

Inserted Joints Casing. 50x

Steel Boiler Tubes. 80x

**Planes and Plane Irons.**

**Wood Planes.**

Molding. 40x10x10

Bench, First Quality. 50x10x10

Bench, Second Quality. 55x10x10

Bailey's (Stanley R. & L. Co.). 52x10x10

**Iron Planes.**

Bailey's (Stanley R. & L. Co.). 50x10x10

Miscellaneous Planes (Stanley R. & L. Co.). 55x10x10

**Hack Saws—**

Griffin's, complete.....40¢@10¢50¢  
 Griffin's Hack Saw, Blades.....40¢@10¢50¢  
 Star Hack Saws and Blades.....25¢  
 Bureka and Crescent.....25¢

**Scroll—**

Lester, complete, \$10.00.....25¢  
 Rogers, complete, \$4.00.....25¢  
 Barnes' Builders' and Cab. Makers' \$15.25¢  
 Barnes' Scroll Saw Blades.....25¢

**Saw Frames—See Frames, Saw.****Saw Sets—See Sets, Saw.****Saw Tools—See Tools, Saw.****Scales—**

Hatch, Counter, No. 171, good quality.....\$21.00  
 Hatch, Tea, No. 161.....\$6.75@7.00  
 Union Platform, Plain.....\$3.10@3.30  
 Union Platform, Striped.....\$3.40@3.50  
 Chatillon's Grocers' Trip Scales.....50¢  
 Chatillon's Eureka.....25¢  
 Chatillon's Favorite.....40¢  
 Family, Turnbulla.....50¢@10¢10¢  
 Kiehl Bros.' Platform.....40¢

**Scale Beams—See Beams, Scale.****Scissors, Flating.....45¢****Scrapers—**

Adjustable Box Scraper (S. R. & L. Co.).....\$2.50  
 Box, 1 Handle.....\$4.00@4.10  
 Box, 2 Handle.....\$4.00@4.10  
 Defense Box and Ship.....\$2.00@2.10  
 Foot.....\$3.50@3.60  
 Ship, Common.....\$3.50 net  
 Ship, R. I. Tool Co.....\$4.00

**Screen Window and Door Frames—See Frames.****Screw Drivers—See Drivers, Screw.****Screws.**

**Bench and Hand—**  
 Bench, Iron.....55¢@10¢55¢  
 Bench, Wood, Beech.....\$2.25  
 Bench, Wood, Hickory.....20¢@10¢  
 Hand, Wood.....25¢@10¢25¢  
 Hand, Grand Rapids, list.....5¢  
 Lag, Blunt Point, list Jan. 1, 1890, 75¢@10¢  
 Coach and Lag, Gimlet Point, list Jan. 1, 1890.....75¢@10¢  
 Red.....25¢@10¢  
 Hand Rail, Sargent's.....60¢@10¢  
 Hand Rail, H. & F. Mfg. Co.....70¢@10¢  
 Hand Rail, Am. Screw Co.....75¢  
 Jack Screws, Millers Falls list.....50¢@10¢  
 Jack Screws, P. S. & W.....60¢@10¢  
 Jack Screws, Sargent.....60¢@10¢  
 Jack Screws, Stearns.....40¢@10¢

**Cork—**

Humason & Beckley Mfg. Co. 40¢@10¢50¢  
 Williamson's.....35¢@39¢45¢  
 Howe Bros. & Hulbert.....35¢

**Machine—**

**Flat Head, Iron.....55¢**  
**Round Head, Iron.....50¢**  
**Wood—**  
 List January 1, 1891.  
 Flat Head Iron.....70¢  
 Round Head Iron.....65¢  
 Flat Head Brass.....65¢  
 Round Head Brass.....65¢  
 Flat Head Bronze.....70¢  
 Round Head Bronze.....65¢  
 Rogers' Drive Screws.....83¢

**Scroll Saws—See Saws, Scroll.****Scythes.**

Grain.....40¢@10¢40¢  
 Grass.....40¢@10¢50¢  
 Scythe Snaths—See Snaths, Scythe Sets.

**Awl and Tool.**

**Alken's Sets, Awls and Tools,**  
 No. 20, \$10.00.....55¢@10¢  
 Pray's Adj. Tool Hds., No. 1, \$12, \$18, \$24, \$30.....25¢@10¢  
 Miller's Adj. Tool Hds., No. 1, \$12, \$18, \$24, \$30.....25¢@10¢  
 No. 1, \$12, \$18, \$24, \$30.....25¢@10¢  
 Henry's Combination Haft.....\$0.50  
 Stanley's Excelsior.....30¢@10¢  
 Common Trade Set.....\$0.50  
 No. 42, \$10.50; No. 43, \$12.50.....70¢@10¢50¢

**Nail—**

**Square.....\$7, \$4.00@4.25**  
**Round.....\$7, \$4.00@4.25**  
 Buck Bros.....\$7.75  
 Cannon's Diamond Point.....\$7.12, 20¢

**Rivet.**

Regular list.....50¢@10¢

**Saw—**

Stillman's Genuine.....\$35.00@7.75, 40¢@5¢  
 Stillman's Pattern Hand, \$7 dos \$3.25;  
 Cross Cut, 5.25.....45¢@50¢  
 Common Lever.....\$2.00, 45¢@50¢  
 Merrill's No. 1, \$15.00; Nos. 3, 4, \$24.00.....40¢@10¢50¢  
 Leach's, No. 0, \$3.00; No. 1, \$15, 15¢@50¢  
 Nash's.....\$0.10@10¢10¢10¢  
 Hammer, Hotchkiss.....\$5.50, 10¢  
 Hammer, Bemis & Call Co.'s new Pat.....30¢@25¢  
 Bemis & Call Co.'s Lever and Spring Hammer.....30¢@25¢  
 Bemis & Call Co.'s Plate.....10¢  
 Bemis & Call Co.'s Cross Cut.....12¢  
 Aiken's Genuine.....\$13.00, 50¢@10¢60¢  
 Aiken's Imitation.....\$7.00, 50¢@25¢  
 Hart's Pat. Lever.....20¢  
 Diaston's Star.....25¢  
 Leopold.....40¢@10¢50¢  
 Atkin's Lever.....\$2.00 No. 1, \$6.00  
 Atkin's Criterion.....\$1.00 No. 1, \$6.00  
 Croissant (Keller), No. 1, \$15.00; No. 2, \$24.00.....40¢@10¢  
 Avery's Saw Set and Punch.....60¢  
 Chieftain Co.'s Superior.....\$7.00  
 Chieftain Co.'s Royal.....\$7.00  
 Crescent.....\$3.00  
 Sharpeners, Knife.

**Parkins.**

Applewood Handles.....\$2.00, 40¢  
 Rosewood or Cocobola.....\$2.00, 40¢

**Shaves, Spoke**

Iron.....45¢  
 Wood.....30¢  
 Bailey's (Stanley R. & L. Co.).....40¢@10¢  
 Stearns.....30¢@10¢  
 Cincinnati.....35¢@10¢  
 Goodell's, \$ dos \$9.00.....25¢

**Shears—**

American (Cast) Iron.....75¢@10¢75¢  
 Barnard's Lamp Trimmers.....\$ dos \$3.75  
 Tinner's.....20¢@25¢  
 Seymour's, list, Dec. 1881.....60¢@10¢10¢60¢  
 Heinisch's, list, Dec. 1881.....60¢@10¢10¢60¢  
 Heinisch's Tailor's Shears.....35¢@5¢  
 Cast Steel Trimmers.....80¢@10¢10¢  
 First quality.....80¢@10¢10¢  
 Second quality.....80¢@10¢10¢  
 Acme Cast Shears.....10¢@10¢  
 Diamond Cast Shears.....10¢@10¢  
 Clipper.....10¢@10¢  
 Victor Cast Shears.....75¢@10¢75¢  
 Howe Bros. & Hulbert, Solid Forged Steel.....40¢  
 Chicago Drop Forge P. Co., Solid Steel Forged.....60¢  
 Davenport Cutlery Co.....60¢@10¢10¢  
 Clausen Shear Co., Japaned.....70¢  
 Clausen Shear Co., Nickel, same list.....70¢  
 Galvanic, 3½ to 9 in., \$ dos, \$1.00 ½ inch

**Pruning Shears and Hooks.**

Diaston's Combined Pruning Hook and Saw.....\$ dos \$15.00, 20¢@10¢  
 Diaston's Pruning Hook, \$ dos \$12.00.....20¢@10¢  
 E. S. Lee & Co.'s Pruning Tools.....40¢  
 Pruning Shears, Henry's Pat., \$ dos.....45¢  
 Henry's Pruning Shears, \$ dos \$4.25@4.50

Wheeler, M. & C. Co.'s Combination, \$ dos \$12.00, 20¢  
 Dunlap's Saw and Chisel, \$ dos \$5.50, 30¢  
 J. Mallinson & Co., No. 1, \$5.25; No. 2, 7.25  
 P. S. & W. Co.....60¢

**Tinner's, &c.—**

Shears and Snips (P. S. & W.).....20¢@25¢  
 Snips, J. Mallinson & Co.....33¢@45¢

**Sheaves—**

**Sliding Door—**  
 M. W. Co., list July, 1888.....50¢@10¢50¢  
 R. & E., list Dec. 18, 1888.....55¢@20¢  
 Corbin's list.....60¢@10¢25¢  
 Patent Roller.....60¢@10¢25¢  
 Patent Roller, Hatfield's.....75¢  
 Russell's Anti-Friction, list Dec. 18, 1888.....60¢@10¢  
 Moore's Anti-Friction.....50¢  
**Sliding Shutter—**  
 R. & E. list Dec. 18, 1888.....60¢@10¢25¢  
 Sargent's list.....60¢@10¢  
 Reading list.....60¢@10¢10¢

**Shells—**

First quality 4, 8, 10 and 12 gauge.....25¢@10¢25¢  
 First quality, 14, 16 and 20 gauge (\$10 list).....30¢@10¢25¢  
 Prize.....40¢@25¢  
 Star, Club, Rival and Climax brands.....35¢@10¢25¢  
 Seibold's Comb. Shot Shells.....60¢@25¢  
 Brass Shot Shells, 1st quality.....60¢@25¢  
 Brass Shot Shells, Club, Rival, Climax.....65¢@25¢

**Shells Loaded—**

standard list, July 19, 1890.....40¢@10¢10¢40¢

**Ship Tools—**

L. & J. White.....20¢@25¢

**Shoes, Horse, Mule, &c.—**

**Horse—**  
 Burden's, Perkins', Phoenix and Bryden's, at factory.....\$4.00  
 Bryden's Frog Pressure, at factory.....\$5.00

**Mule—**

Add \$1 ½ kg to above prices.  
**Or, Wrought—**  
 Ton lots.....\$ dos \$9  
 1000 lb lots.....\$ dos \$9 ½  
 500 lb lots.....\$ dos \$10

**Shot—**

Drop, up to B, 25-b bag.....\$1.43  
 Drop, up to B, 5-b bag......35  
 Drop, B and larger, 25-b bag.....1.67  
 Drop, B and larger, 5-b bag......40  
 Buck and Chilled, 25-b bag.....1.67  
 Buck and Chilled, 5-b bag......40  
 Dust Shot, 25-b bag.....2.00  
 Dust Shot, 5-b bag......45

**Shovels and Spades—**

Ames' Shovels, Spades, &c., list Nov. 1, 1886.....30¢  
 Notz.—Jobbers frequently give 6¢@7¢ extra on above.....50¢@10¢  
 Griffith's Black Iron.....60¢@10¢  
 Griffith's C. S. R. S. Goods.....20¢  
 St. Louis Shovel Co.....20¢@10¢75¢  
 Hussey, Binns & Co.....15¢@25¢  
 Hubbard & Co.....20¢@10¢75¢  
 Lehigh Mfg. Co.....60¢@10¢  
 E. M. Myers Co.....30¢  
 Payne Postelone & Son.....35¢@25¢  
 Hemmington's (Lowman's) Pat.....30¢@10¢40¢  
 Rowland's, Black Iron.....60¢@10¢  
 Rowland's Steel.....60¢@10¢10¢

**Shovels and Tongs—**

Iron Head.....60¢@10¢60¢10¢5¢  
 Brass Head.....60¢@10¢10¢

**Sieves—**

Mann's Tin Rim.....60¢@25¢  
 Buffalo Metallic, S. S. & Co.....60¢@25¢  
 Shaker (Barier's) Pat. Flour Sifters.....\$ dos \$2.00, \$ gr \$21.00  
 Electric.....\$ dos \$21.00  
 A. & W. Sifters.....\$ dos 2.00  
 A. & W. Sifters.....\$ dos \$2.00  
 Smith's Adjustable Sifter.....\$ dos \$2.00  
 Smith's Adjustable Milk Strainer.....\$ dos \$2.00  
 Smith's Adjustable T. & C. Strainer.....\$ dos \$1.25

**Staves, Wooden Rim—**

Mesh 18, Nested, \$ dos.....\$1.00  
 Mesh 20, Nested, \$ dos.....\$1.10  
 Mesh 24, Nested, \$ dos.....\$1.15

**Skels, Thimble—**

Western list.....75¢@10¢75¢10¢  
 Columbus Wrt. Steel, Special net prices  
 Coldbrookdale Iron Co.....60¢  
 Seneca Falls Pattern.....60¢  
 Utica P. S. T. Skels.....60¢  
 Utica Turned and Fitted.....35¢

**Slates—**

School, by case.....50¢@10¢50¢10¢10¢

**Snaps, harness, &c.—**

Anchor (T. & S. Mfg. Co.).....65¢  
 Fitch's (Bristol).....60¢@10¢  
 Hotchkiss.....10¢  
 Andrews.....60¢  
 Sargent's Patent Guarded.....70¢@10¢10¢  
 German, new list.....40¢@10¢  
 Covert, New Patent.....60¢@10¢50¢  
 Covert, New R. E.....60¢@10¢50¢  
 Covert Springs.....60¢@10¢10¢  
 L. Covert's Triumph.....33¢@45¢

**Snaths, Scythe.**

List.....50¢

**Soldering Irons—See Irons, Soldering.****Spittoons, Cuspiders, &c.**

**Standard Fiberglass—**  
 Cuspiders, 5¼-inch, \$ dos., No. 5, \$8;  
 No. 5X \$9.  
 Spittoons, Daisy, 8-inch, No. 1, \$4; 10 and 11 inch, \$6.

**Spoke Shaves—See Shaves, Spoke.****Spoke Trimmers—See Trimmers, Spoke.****Spoons and Forks—**

**Tinned Iron—**  
 Basting, Cen. Stamp, Co.'s list.....70¢@10¢  
 Solid Table and Tea, Cen. Stamp, Co.'s list.....70¢@10¢  
 Buffalo S. S. & Co.....35¢@25¢

**Silver-Plated—(4 mos. or 6 cash 30**

Meriden Brit. Co., Rogers.....40¢@15¢  
 C. Rogers & Bros.....40¢@15¢  
 Rogers & Bro.....40¢@15¢  
 Reed & Barton.....40¢@15¢  
 Wm. Rogers Mfg. Co.....40, 15¢@25¢  
 Simpson, Hall, Miller & Co.....40, 15¢@25¢  
 Bolles & Edwards Silver Co.....40, 15¢@25¢  
 L. Boardman & Son.....50¢@12¢45¢

**Miscellaneous.**

Holmes & Edwards Silver Co.:  
 No. 67 Mexican Silver.....50¢@10¢25¢  
 No. 30 Silver Metal.....50¢@10¢25¢  
 No. 24 German Silver.....50¢@10¢25¢  
 No. 50 Nickel Silver.....50¢@10¢25¢  
 No. 49 Nickel Silver.....50¢@10¢25¢  
 Wm. Rogers Mfg. Co.....50, 10¢@25¢  
 Rogers' Silver Metal.....50, 10¢@25¢  
 185 Rogers' German Silver.....60¢@25¢  
 225 Rogers' Nickel Silver.....60¢@25¢  
 German Silver, Hall & Elton.....50¢@25¢ cash  
 Nickel Silver.....50¢@25¢ cash  
 Britannia.....60¢@25¢  
 Boardman's N'ck'l Silver, list July 1, 1891.....60¢@25¢ cash  
 Boardman's Britannia Spoons, case lots.....60¢@25¢ cash

**Springs—****Door—**

Torrey's Rod, 39 in.....\$ dos \$1.20@1.25  
 Gray's, \$ gr, \$20.00.....25¢  
 Bee Rod \$ gr, \$20.00.....25¢@25¢  
 Warner's No. 1, \$ dos, \$2.80, No. 2, \$3.50.....50¢@20¢  
 Gem (Coll), list April 19, 1886.....10¢@15¢  
 Star (Coll), list April 19, 1886.....20¢@25¢  
 Victor (Coll).....50¢@10¢60¢10¢5¢  
 Champion (Coll).....50¢@10¢60¢10¢5¢  
 Corwell's No. 1, \$ dos, \$18.00; No. 2, \$15.00.....50¢@25¢  
 Rubber, complete, \$ dos, \$4.50.....50¢@10¢  
 Hercules.....50¢@10¢10¢

**Carriage, Wagon, &c.—**

Elliptic, Concord, Platform and Hair Scroll.....60¢@10¢10¢  
 Cliff's Bolster Springs.....25¢

**Squares—**

Steel and Iron.....\$80¢@10¢80¢10¢10¢  
 Nickel-Plated.....80¢@10¢80¢10¢  
 Try Square and T Bevels.....80¢@10¢80¢10¢  
 Diaston's Try Square and T Bevels.....50¢  
 Winterbottom's Try and Miter.....30¢@10¢  
 Starrett's Micrometer Calliper Squares.....25¢  
 Avery's Flush Bevel Squares.....40¢  
 Avery's Bevel Protractor.....50¢

**Squeezers.****Fodder—**

Blair's.....\$ dos \$2.00  
 Blair's "Climax".....\$ dos \$1.25

**Lemon—**

Wood, No. 2.....\$ dos \$5.00, 35¢  
 Wood, Common.....\$ dos \$1.70@1.75  
 Dunlap's Improved.....\$ dos \$3.75, 90¢  
 Sammis.....\$ dos \$3.75, 90¢  
 Jennings' Star.....25¢@10¢  
 The Boss.....\$ dos \$2.50  
 Dean's, Nos. 1, \$ dos \$4.50; 2, \$3.35; 3, \$1.90; Queen, \$2.50  
 Little Giant.....50¢@25¢  
 King.....40¢@25¢  
 Hotchkiss Straight Flash.....\$ dos \$12.00  
 Silver & Co., Glass.....\$ gro. \$2.00  
 Manny Lemon Juice Extractor.....Standard.....\$ dos \$0.75@1.00  
 Improved.....\$ dos \$2.00

**Standard Fiber Ware—See Ware, Standard Fiber.****Staples.****Blind—**

Barbed, ½ in. and larger.....\$ dos \$7.75@7.95  
 Barbed, ¾ in.....\$ dos \$8.45@8.65  
 Fence Staples, Galvanized.....Same price  
 Fence Staples, Plain.....Same price  
 See Trd. Rep.

**Steelyards.....40¢@10¢50¢.****Stocks and Dies—**

Blacksmith's  
 Waterford Goods.....40¢@40¢10¢  
 Butterfield's Goods.....40¢@40¢10¢  
 Lightning Screw Plate.....25¢@30¢  
 Reece's New Screw Plate.....35¢@40¢  
 Reversible Ratchet.....30¢  
 Gardner.....25¢

**Stops, Bench.**

Morrill's.....\$ dos \$9, 50¢  
 Hotchkiss's.....\$ dos \$5, 10¢@10¢10¢  
 Weston's, No. 1, \$10; No. 2, \$10, 25¢@10¢45¢  
 McGill's.....\$ dos \$3, 25¢@10¢  
 Cincinnati.....25¢@10¢  
 Terrell's Nos. 1 and 2, \$ dos, \$3; No. 3, \$3.50.....30¢

**Stone—**

Hindustan No. 1, 3½; Axa, 3½; Slips No. 1, 4½  
 Sand Stone.....\$ dos \$14  
 Washita Stone, Extra.....\$ dos \$22@25¢  
 Washita Stone, No. 1.....\$ dos \$19@20¢  
 Washita Stone, No. 2.....\$ dos \$12@13¢  
 Washita Slips, No. 1, Extra.....\$ dos \$44@45¢  
 Washita Slips, No. 1, 4 to 10 in.....\$ dos \$1.50  
 Arkansas Stone, No. 1, 6 to 9 in.....\$ dos \$1.50  
 Turkey Oil Stone, 4 to 5 in.....\$ dos \$1.00@1.50  
 Lake Superior, Chase.....\$ dos \$1.50  
 Lake Superior Slips, Chase.....\$ dos \$1.50  
 Seneca Stone, Red Paper Brand.....\$ dos \$1.50  
 Seneca Stone, High Rounds.....\$ dos \$20@25¢  
 Seneca Stone, Small Whets.....\$ gro \$24.00

**Steve Polish—See Polish, Steve.****Stretchers, Carpet.**

Cast Steel, Polished.....\$ dos \$12.25  
 Cast Iron, Steel Points.....\$ dos \$4.00  
 Sullard's.....\$ dos \$1.75  
 Sullard's.....\$ dos \$1.75

**Strops, Razor—**

Genuine Emerson.....60¢@10¢25¢  
 Imitation.....\$ dos \$2.00, 30¢@10¢25¢  
 Torrey's.....\$ dos \$1.00, 20¢  
 Badger's Belt and Com.....\$ dos \$1.00  
 Lamont Combination.....\$ dos \$4.00  
 Jordan's Pat. Padded, list Nov. 1, 89, 50¢ Electric.....list net

**Stuffers or Fillers, Sausage.**

Miles' "Challenge," \$ dos \$20, 50¢@50¢10¢  
 Ferry.....\$ dos, No. 1, \$15.00; No. 2, \$21.00.....50¢@50¢10¢  
 Draw Cut No. 4, each \$30.00.....20¢  
 Enterprise Mfg. Co.....20¢@10¢30¢  
 Silver.....40¢@10¢

**Sweepers, Carpet.**

Bissell No. 5.....\$ dos \$17.00  
 Bissell No. 7 New Drop Pan.....\$ dos \$19.00  
 Bissell, Gram.....\$ dos \$36.00  
 Grand Rapids.....\$ dos \$34.00  
 Crown Jewel, No. 1, \$18.00; No. 2, \$19.00; No. 3, \$20.00  
 Magic.....\$ dos \$16.00  
 Jewel.....\$ dos \$17.00  
 Improved Parlor Queen.....\$ dos \$27.00  
 Japanned.....\$ dos \$24.00  
 Excelior.....\$ dos \$23.00  
 Garland.....\$ dos \$18.00  
 Parlor Queen.....\$ dos \$24.00  
 Housewife's Delight.....\$ dos \$16.00  
 Queen, with band.....\$ dos \$16.00  
 Queen, with band.....\$ dos \$16.00  
 King.....\$ dos \$16.00  
 Weed, Improved.....\$ dos \$16.00  
 Hub.....\$ dos \$16.00  
 Cog-Wheel.....\$ dos \$16.00  
 Easy.....\$ dos \$23.00  
 Monarch.....\$ dos \$23.00  
 Goshell.....\$ dos \$11.00  
 Ladies' Friend.....\$ dos \$11.00  
 Advance.....\$ dos \$18.00  
 Supreme.....\$ dos \$23.00

**Tacks, Brads, &c.—**

List October 19, 1889. Old established standard weights Short Weight goods are sold at lower prices.

**Carpet Tacks—**

American, Blued.....75¢  
 American, Tin'd and Cop'd.....77¢  
 Steel, Bright and Blued.....72¢  
 Steel, Tinned and Coppered.....72¢  
 Swedes Iron, Blued.....72¢  
 Swedes Iron, Tinned.....75¢  
 American Iron Tacks.....72¢  
 Swedes Iron Tacks.....75¢  
 S. S., Blued.....75¢  
 S. S., Tinned.....77¢  
 Lanc., Blued.....60¢  
 Lanc., Tinned.....72¢  
 Gimp and Lace Tacks.....75¢  
 S. S., Blued.....77¢  
 Lanc., Blued.....60¢  
 Lanc., Tinned.....72¢  
 Basket and Trimmer's Tacks.....65¢  
 Lanc.....65¢  
 S. S.....70¢  
 Hungarian Nails.....60¢  
 Miners' Tacks, Lanc.....70¢  
 Common and Patent Brads.....60¢  
 Leathered Tacks.....50¢  
 Brush Tacks.....50¢  
 Looking Glass Tacks.....50¢  
 Picture-Frame Points.....50¢  
 Finishing Nails.....60¢  
 Trunk and Clout Nails.....60¢

**Black—**

Tinned or Cop'd.....60¢  
 Basket Nails.....60¢  
 Chair Nails.....60¢



## Galv., Nos. 9 to 18.....67½¢

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Zinc, French, Red Seal.....	..	84
Zinc, French, Green Seal.....	..	84
Zinc, French, V. M. X.....	..	7
Zinc, Antwerp, Red Seal.....	..	74
Zinc, Antwerp, Green Seal.....	..	84
Zinc, German, L. Z. O.....	..	84
Zinc, V. M. in Poppy Oil, G. Seal, lots of 1 ton and over.....	104	114
lots less than 1 ton.....	11	114
Zinc, V. M. in Poppy Oil, Red Seal.....	10	104
lots of 1 ton and over.....	10	104
lots of less than 1 ton.....	104	104
Discounts.—French Zinc.—Discounts on buyers of 10-bbl. lots of one or as- sorted grades, 1% ; 25 bbls, 2%, 50 bbls, 3%. No discount allowed on less than bbl. lots.		
<b>Colors in Oil.</b>		
Black, Drop, Frankfurt.....	25	30
Black, Drop, English.....	12	15
Black, Drop, Domestic.....	7	10
Black, Lamplack, Best.....	20	35
Black, Lamplack, Common.....	7	18
Black, Ivory.....	8	15
Black, Chinese.....	35	40
Black, Russian.....	20	45
Blue, Ultramar.....	12	18
Brown, Vandyke.....	7	12
Green, Chrome.....	8	18
Green, Paris.....	16	184
Uenna, Raw.....	7	14
Uenna, Burnt.....	7	14
Umbur Raw.....	7	10
Umbur, Burnt.....	7	10
<b>Putty.</b>		
n barrels and ¼ bbls....	.0134	.0134
n tubs.....	.0134	.0134
n tin cans.....	.0134	.024
n bladders.....	.0134	.024
<b>Spirits Turpentine.</b>		
n regular bbls.....	34	40
n machine bbls.....	344	..
<b>Glass.</b>		
ow Grade.....	8	10
abinet.....	12	14
edium White.....	13	15
extra White.....	17	20
rench.....	10	22
English.....	10	15

